THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. III. CHICAGO, AUGUST 30, 1884. NO. 9.

ORIGINAL ARTICLES.

DERMATITIS HERPETIFORMIS.

BY LOUIS A. DUHRING, M.D., OF PHILADELPHIA, PA.

Read in the Section on Practice of Medicine and Materia Medica, of American Medical Association, May, 1884.

Under the name Dermatitis Herpetiformis I propose to place a number of cases of skin disease that I have encountered from time to time. These cases at present are for the most part nameless, having been regarded and diagnosed, either as peculiar manifestations of one or another of the commoner and well-known diseases, as eczema, herpes, or pemphigus, or, in some cases, as undescribed diseases. From these remarks it will be inferred that the disease is rare, and such in a measure is the fact. At the same time I have met with a sufficient number of cases during the last fifteen years, to warrant the view that the disease is worthy of a special description and a name. I first recognized the affection as being peculiar as far back as 1871, but with the few cases observed at that time was at a loss to classify or to treat them satisfactorily. Since this date I have encountered a number of other cases illustrating the same and other varieties of the disease. In the first edition (1877) of my Treatise on Skin Diseases, I made no allusion to the subject, for the reason that my mind was not clear as to the relation that the several cases I had encountered bore one to another, nor that they were really all merely different manifestations of the same pathological process. In the light, however, of a number of marked cases that have now been under observation for a period of years, and of others that have been more recently noted, the statement may be made that, dissimilar as they may in some cases at first sight appear, they all represent varieties of one and the same disease, for which I propose the name "dermatitis herpetiformis."

In the present communication attention will be directed to the principal features of the disease, describing more particularly its symptoms and natural course. On another occasion cases illustrating the several varieties will be brought forward.

It may be premised here that dermatitis herpetiformis includes what Hebra[1] designated first herpes impetiginiformis and afterwards "impetigo herpetiformis;" that is to say, that the cases of Hebra constitute one of the varieties of the disease it is proposed to call dermatitis herpetiformis. And here it may be remarked that this name must not be confounded with the "dermatitis circumscripta herpetiformis" of Neumann, a term introduced by this author a few years ago to designate lichen planus, which at that time he supposed to be an undescribed disease. It may be added that this term is now no longer used by Neumann.

In the second edition of my Treatise on Skin Diseases (1881) p. 276, under the title "impetigo herpetiformis," will be found an abstract of Hebra's description of the disease he so named.

His account may be summarized as follows: It is a rare and grave form of skin disease, of which, at the date of his report, he had seen but five examples, four of which terminated fatally. The disease is characterized by the formation of yellowish pustules, arranged in groups or in an annular form, which tend to run together and to dry into yellowish, greenish, or brownish crusts, beneath which a red, excoriated, moist surface exists. On the periphery of the lesions and patches new groups and rings of pustules form. The course of the disease was similar in every case. Each outbreak of pustules was preceded by malaise, chills, fever, and systemic disturbance. The disease occupied all regions, with preference for the anterior surface of the trunk and the flexor surfaces of the thighs.

Single cases, under different names,[1] were before this date reported by Bærensprung,[2] Neumann,[3] Auspitz,[4] and Geber.[5] Heitzmann[6] has more recently also reported a case with the name impetigo herpetiformis. As supplementary to Hebra's description, I gave my own experience with hitherto undescribed varieties of the disease in the following language: "*Within the last ten years I have from time to time met with cases, occurring in both sexes, representing other phases of the disease than heretofore described. In some cases the lesions were vesicular and bullous;*[7] *in others pustular; in still others, and in the majority*

[1] Wiener *Med. Wochensch.* No. 48, 1872; see also *Lancet*, March 23, 1872.

[1] Wiener *Med. Wochensch.*, No. 48, 1872; The *Lancet*, March 23, 1872; Atlas der Hautkrankheiten, Heft ix, Tafeln 9 und 10. Wien, 1876.

[2] Atlas der Hautkrankheiten, Tafel 8. Berlin, 1867.

[3] Lehrbuch der Hautkrankheiten, III. Auflage, Wien, 1873, p. 173.

[4] Archiv für Derm. und Syph., II. Heft, 1869, p. 246.

[5] Jahresb. des K. K. Allg. Krankenhauses zu Wien, Jahrg. 1871.

[6] *Archives of Dermatology*, January, 1878.

[7] In Hebra's fifth case the disease was characterized by vesicles and blebs, from which circumstance he was inclined to regard the disease as a variety of herpes, and designated it "herpes impetiginiformis." *Lancet*, March 23, 1872.

of cases, bullous and pustular combined, or these lesions appearing alternately,—the disease being at one time vesicular and bullous, at another time pustular. In all instances the disposition to group or to extend about the periphery was more or less marked. A varied amount of constitutional disturbance, with violent itching, was always present. The disease manifested a disposition to constant recurrence, in the form of repeated attacks, extending in the majority of cases over years, and was but little influenced by treatment. None of the cases occurred in pregnant women; nor in any case has the disease proved fatal. The disease is liable to be confounded with eczema, ecthyma, and pemphigus, according as the lesions happen to be vesicles, pustules, or blebs. The etiology and pathology of the disease are both obscure. In some cases it possesses many features in common with pemphigus; . . . . . other cases, however, manifest but little disposition to the formation of blebs. It is therefore evident that the process is capable of appearing in the form of various lesions, and that the true impetigo herpetiformis represents but one variety of the disease. More information is needed before the disease can be assigned its proper place in classification."

These words, written four years ago, give a brief account of the disease which is the subject of this communication, and portray its important features. The description is succinct, but it embraces the leading points, and, it may be added, agrees with the views I hold at the present time.

It will be seen from this discription that the name impetigo herpetiformis is altogether inappropriate to express the condition in other and equally important varieties of the disease. The cases that fell under Hebra's observation were for the most part instances of the pustular variety, and he therefore regarded the name he selected as proper; but to call a vesicular or bullous disease "impetigo," with our present ideas of nomenclature, is of course most confusing. Because of the multiformity of the lesions manifested in the several varieties, which will be shown may exist, therefore I think the term dermatitis more suitable, allowing as it does all varieties of this most protean affection to come under its title. The adjective herpetiformis expresses the chief characteristic of the disease, and as in Hebra's cases of the pustular variety, has been present in all of my cases. The disease is unquestionably herpetic, especially in its typical and commonest manifestation, that is, the lesions tend to be vesicular and to occur in small groups or clusters. And for this reason it has on several occasions occurred to me that the affection ought to be regarded as a herpes, an observation that was also made by Hebra, and by the other reporters of cases mentioned. All of these observers recognized its herpetic character.

The name herpes pruriginosus, it might be suggested, or herpes chronicus (as proposed by Neumann) would seem suitable and would answer well for most of the cases observed, itching being always a marked and constant symptom. At the same time, if this term were adopted, our present definition of herpes would require to be changed, and we should be obliged to regard pustular and bullous lesions as manifestations of herpes, an admission which would be confusing, or even disastrous in its results.

For these reasons I think the name now introduced preferable. That such a protean disease as I have intimated exists, and that these varied cutaneous manifestations are all but forms of one pathological process, there can be no doubt, and I shall elucidate this point by describing the several important varieties, which, as in the case of eczema, are based upon the predominance of certain lesions. Before doing this, however, I may refer to certain symptoms common to all forms of the disease, to which no particular allusion has as yet been made. In severe cases prodromata are usually present for several days preceding the cutaneous outbreak, consisting of malaise, constipation, febrile disturbance, chilliness, heat, or alternate hot and cold sensations. Itching is also generally present for several days before any sign of efflorescence. Even in mild cases slight systemic disorders may precede or exist with the outbreak. This latter may be gradual or sudden in its advent and development. Not infrequently it is sudden, one or another manifestation breaking out over the greater part of the general surface diffusely or in patches in the course of a few days, accompanied by severe itching or burning.

A single variety, as for example, the erythematous or the vesicular, may appear, or several forms of lesion may exist simultaneously, constituting what may very properly be designated the multiform variety. The tendency is, in almost every instance that I have observed, to multiformity. There is, moreover, in almost every case a distinct disposition for one variety, sooner or later, to pass into some other variety; thus, for the vesicular or pustular to become bullous, or *vice versa*. This change of type may take place during the course of one attack or on the occasion of a relapse; or, as is often the case, it may not show itself until months or years afterward. I have notes of several cases where, during a period of from two to five years, the erythematous, vesicular, and bullous varieties were all in turn manifested. Permit me, however, again to state that not only multiformity of lesion, but irregularity in the order of development, is the rule, whether during an attack or later in the course of the disease.

Itching, burning or pricking sensations are always present. When the eruption is profuse they are intense, and cause the greatest suffering. As in the case of eczema, before and with each outbreak they become most violent, abating in a measure only with the laceration or rupture of the lesions.

The disease is rare, but is of more frequent occurrence than I formerly supposed. I have encountered fifteen cases, during a period of as many years, drawn from hospital, dispensary and private practice. All, with one exception, were adults, including both sexes in about equal proportion. The natural history is interesting. The process is in almost all instances chronic, and is characterized by more or less distinctly marked exacerbations or relapses, occurring at intervals of weeks or months. The disposition to appear in successive crops, sometimes slight, at other times severe, is peculiar. Relapses are the rule, the

disease in most cases extending over years, pursuing an obstinate, emphatically chronic course. All regions are liable to invasion, including both flexor and extensor surfaces, the face and scalp, elbows and knees, and palms and soles. Excoriations and pigmentation, diffuse and in localized areas, are in old cases always at hand in a marked degree. The pigmentation is usually of a mottled, dirty-yellowish or brownish hue, and is persistent. I have seen it as pronounced as in chronic pediculosis corporis.

The more important forms of the disease may now be considered.

DERMATITIS HERPETIFORMIS (ERYTHEMATOSA).

The erythematous variety manifests itself in patches or as a diffuse efflorescence, as an erythema or superficial inflammation, usually of an urticarial or erythema-multiform-like type. The urticarial element may be marked, the skin showing a disposition to acute œdematous infiltration in a diffuse form. Urticarial complication, rather than urticaria, is suggested by the condition of the skin; in like manner, a resemblance to diffuse erythema multiforme may be noted. At times the patches, whether discrete or confluent, are circumscribed, and later, by their coalition, show irregularly-shaped, marginate outlines, as in erythema multiforme. The color varies with the shape, being at first bright-red, but soon becoming deep-red or violaceous, mottled, and tinged with yellowish hues. The variegation is usually pronounced in the later stages of the process, at which period more or less diffuse pigmentation is also present. Together with the erythematous inflammation there may form maculo-papules, or circumscribed or diffuse flat infiltrations, variable as to size and shape; also vesico-papules, the process now bearing a resemblance to the first stage of herpes iris. It will thus be noted that the eruption, in its general aspect and course, is much like that of erythema multiforme. In severe cases the outbreak is preceded by and accompanied with malaise, chilliness or slight febrile disturbance. The itching is generally violent, the disease differing in this respect from erythema multiforme.

Its course is variable. It may continue for days or weeks, or, as is usually the case, it may pass into the multiform variety, to be described later. It may be the first manifestation, or it may follow other varieties as a relapse.

As a variety, it is not as clearly defined as the vesicular, bullous or pustular, in some cases it appearing to be but the first manifestation of one of the first-mentioned forms. But it is important that its features be described, for the reason that it is liable to be met with as a clinical picture, and may readily be confounded with other diseases, notably, urticaria, erythema multiforme or eczema. I recall two cases where the diagnosis was at first difficult, and it was not until other manifestations appeared on the skin that the true nature of the process became evident.

DERMATITIS HERPETIFORMIS (VESICULOSA).

The vesicular variety is that most frequently met with. It is characterized by variously sized, varying from a pin-head to a pea, flat or raised, irregularly shaped or stellate, glistening, pale-yellowish or pearly, usually firm or tensely distended vesicles, as a rule, unaccompanied by areolæ. In their early stages they can be seen only with difficulty, and are liable to be overlooked in the examination. Sometimes they can only be detected or seen to advantage in an oblique light. This observation I have repeatedly noted, and arises from the fact of the lesions being flat, translucent and without areolæ. In size they vary extremely, large and small being formed side by side, and in this respect they differ from the vesicles of eczema. Here and there papules, papulo-vesicles, vesico-pustules and small blebs will sometime be encountered. Concerning their distribution, the eruption as a whole is disseminate, the lesions existing scattered more or less profusely over a given region, as, for example, the neck or the back, but they are for the most part aggregated in the form of small clusters or groups of two, three or more; or there may be patches here and there as large as a silver dollar, upon which a number will be seated. When in close proximity they incline to coalesce, as in herpes zoster, forming multilocular vesicles or small blebs. Where this occurs they are generally slightly raised and are surrounded with a pale or distinctly reddish areola, which shows forth the irregular, angular or stellate outline of the lesion. At this stage, moreover, the little cluster will generally present a "puckered" or "drawn up" appearance, indicative of its herpetic nature.

The eruption is usually profuse, sometimes to the extent of the upper extremities, trunk and thighs being well covered. It may attack any region, the neck, chest, back, abdomen, upper extremities, and thighs all being especially liable to invasion.

The most striking symptom is the itching. Not infrequently burning is also complained of. Itching, however, predominates, and is in all cases violent or even intense. Patients state that it is altogether disproportionately in excess of the amount of eruption. It is, moreover, a persistent itching, causing the sufferer to scratch constantly. It generally precedes the outbreak, and does not abate until the lesions have been ruptured. Old sufferers, familiar with the natural course of the process, have informed me that they can obtain no relief until the lesions have been ruptured. From my observation I should say that the itching was both more severe and more lasting than in vesicular eczema. The vesicles make their appearance slowly, so that several days, or a week, may be required for their complete development. Notwithstanding that scratching is indulged in in the early stages of the disease, excoriations are not prominent, owing to the fact that the walls of the lesions are tough, and do not rupture, and that they incline to re-fill immediately on being evacuated.

The diagnosis in some cases is attended with difficulty, on account of the resemblance to vesicular eczema. I recall the embarrassment experienced in the classification of the earlier cases encountered, and the provisional diagnoses of "vesicular eczema?" made at the time. But the irregularity in the size and form of the vesicles; their angular or stellate outline; their firm, tense walls, with no disposition to rupture, and their herpetic character, will all serve

to aid in the diagnosis. In some cases the constitutional disturbance and the magnitude of the eruption, as regards profusion, distribution, and multiformity, showing a more formidable disease than eczema, will also be striking. The itching and burning will usually be found to be more continuous and intenser than in eczema. The obstinacy of the disease to the ordinary treatment of eczema, moreover, must also soon become apparent, the usual milder remedies so frequently of service in acute vesicular eczema, being of little or no benefit in this disease. Finally, the tendency to repeated relapses, and the chronicity of the affection, must strike the observer as peculiar. This variety cannot be confounded with herpes zoster, herpes iris, or pemphigus. Its relations to the "herpes gestationis" of some authors will not be considered in this paper, further than to state that in my opinion they are probably one and the same disease. On a future occasion I shall deal more at length with this point.

DERMATITIS HERPETIFORMIS (BULLOSA.)

In the bullous variety the lesions are more or less typical blebs, tense or flaccid, rounded or flat, usually the former, filled with a serous or cloudy fluid, seated upon a non-inflammatory or slightly inflamed base. In size they vary from a pea to a cherry or walnut, and are for the most part irregular or angular in outline. They incline to group in clusters of two or three, the skin between them in this event being reddish and puckered. Sometimes in immediate proximity—almost contiguous—will exist one, two or three, or a part of a circle of small, pin-head sized, flat, whitish pustules. Vesicles of all sizes, flat or raised, are also generally found near by or disseminated over the affected surface. As in the other varieties, all regions may be attacked, especially the trunk, upper extremities and thighs. In several cases I have seen the greater part of the general surface invaded most profusely, in which event the lesions are usually smaller than where comparatively few exist. They incline to appear in crops at irregular intervals, as in the other varieties. The lesions are generally ruptured in the course of a few days and then crust over with a yellowish, greenish or brownish crust. They are accompanied by burning and itching, which may be very severe. They bear resemblance to those of pemphigus vulgaris, with which of course they may be readily confounded, but they are more herpetic in character. They differ in that they incline to group, and have a more inflammatory herpetic aspect, the type of which picture is seen in herpes zoster. Moreover, around and near the bleb will usually be found vesicles and pustules, the latter often in close proximity, the whole manifestation being quite different from that of pemphigus.

DERMATITIS HERPETIFORMIS (PUSTULOSA).

The pustular variety is generally less clearly defined than the vesicular, because the lesions are often intermingled with vesicles, vesico-pustules and blebs. In typical cases the pustules are acuminate, rounded or flat, tense or flaccid, usually the former, and vary in size from a pin-point to a pea or silver quarter-dollar. Vesicles and blebs in some cases precede the pustules. The smallest lesions are generally flat, or on a level with the surrounding skin, and, as stated, are frequently not larger than a pin-point or pin-head. Larger pustules, the size of a pea, are generally rounded or acuminate, and are surrounded by a reddish inflammatory areola. Later they incline to flatten, and to increase in size by spreading peripherally, and drying in the centre.

Sometimes they are seated on a slightly raised base. When fully matured they generally present an "angry" appearance, the skin immediately around them having a "puckered" look, from the fact that the pustule itself is irregular in outline, as sometimes is the case in herpes zoster.

They incline to form in groups of two, three or more, and moreover, often appear in patches of two or more groups. Such an arrangement is generally met with on the trunk. The grouping is further peculiar, in that a central pustule will often be immediately surrounded by a variable number of smaller pustules, sometimes in a circinate form, as in herpes iris.

In other localities, however, no such peculiarity occurs, the lesions being discrete, and even disseminate. The pustules are usually opaque, and of a whitish color; sometimes they are yellowish, though they are seldom so yellowish as in pustular eczema. Not infrequently slight hæmorrhagic exudation occurs, as in the later stages of herpes zoster, giving them a reddish, bluish or brownish hue. They are generally accompanied by sensations of heat, pricking or itching; in some cases these symptoms precede for several days the eruption. They pursue a slow course, from one to two weeks being usually necessary for their full development; in other cases their maturation occurs more rapidly. In some cases, together with the pustules are found vesicles and blebs of various shapes and sizes, and these often form immediately by the side of, or in close proximity to, the pustules. Papules and papulo-vesicles may also be present. In a given area, say of a few square inches, as for example upon the abdomen, there may exist all of these lesions in various stages of evolution. This multiformity is striking, and presents a curious and peculiar mixture of lesions. The attacks last from two to four weeks, after which there generally follows a comparative respite of from one to six weeks. The disease may thus be kept up indefinitely, the outbreaks being at one time slight, at another time severe.

Sometimes it has preceded other varieties; in other cases it has followed the bullous variety; while in some instances that have been under observation for a long period, it has at intervals of months alternated between the vesicular and bullous varieties. After what has been previously said, it need scarcely be stated that this variety is identical with the "impetigo herpetiformis" of Hebra, although in but few of the cases observed by me have the symptoms been so pronounced as in Hebra's experience, if I may judge from the portraits in his Atlas of Skin Diseases. The account given by me relates to the disease as I have encountered it. Hebra's account has been already given, and need not be repeated here. The differ-

ence of experience concerns chiefly the severity of the process. Thus, in none of my cases has it proved fatal, while it will be remembered four out of five of Hebra's cases died, and according to Kaposi[1] (Hebra's successor), ten out of eleven cases observed by him have perished. Finally, I have observed it to occur about as often in men as in women, and also in the latter apart from pregnancy. Hebra, on the other hand, met with it only in women, and, moreover, only during the parturient state.

Concerning the constitutional symptoms, they may be stated to vary with the gravity of the attack. Usually, however, they are more marked than in the other varieties, rigors and alternate paroxysms of heat and cold being especially noticeable. It is the most serious phase of the disease.

DERMATITIS HERPETIFORMIS (PAPULOSA).

The papular variety is in my experience rarer than any other form. I have met with only two cases, one in an adult, the other in a boy, and in both of these the eruption was scanty. It is characterized by the formation of small or large pea-sized, irregularly-shaped, usually firm, reddish or violaceous papular lesions, occurring for the most part in groups of two or three, scattered here and there over the affected surface. They are of variable size, large and small ones not infrequently existing side by side, and are as a rule ill-defined, being neither acuminate nor flat, but resemble the papular infiltrations sometimes met with in abortive herpes zoster. They are of an acute or subacute inflammatory type, and, as stated, bear resemblance to abortive herpetic lesions, and also to certain phases of chronic relapsing papular eczema. Their surfaces are generally excoriated, from scratching, and may be covered with blood-crusts, or with slight, adherent, thin epidermic scales.

The itching is severe, so much so that comparatively few lesions may so torment the patient as to interfere with the night's rest.

Ill-defined papulo-vesicles are also met with here and there, as in the case sometimes of papular eczema. The lesions pursue a slow, chronic course, lasting from one to two or four weeks, when they gradually disappear, leaving more or less pigmentation. Relapses are the rule at longer or shorter intervals.

As I have intimated, this variety bears a close resemblance to chronic papular eczema, and the earlier cases encountered by me were so diagnosed, but the irregularity in the size and form of the lesions; the disposition to group; the usually slow evolution of the lesions; the tendency to appear in crops at irregular intervals; the chronicity of the process; and the extreme obstinacy to local and internal treatment, are all peculiar. It is the mildest phase of the disease.

DERMATITIS HERPETIFORMIS (MULTIFORMIS).

This may be regarded in the light of clinical variety, one that is eminently useful from a practical standpoint. It is a variety of the disease in the same sense that eczema rubrum is a variety of eczema. It is important to consider it for the reason that it is a picture which may at any time show itself in the course of the disease. It is a phase not infrequently met with, and on account of the great mixture of lesions and the difficulties presented in diagnosis, is worthy of special description. The multiform variety consists of erythematous, sometimes slightly raised, urticarial patches of variable size and outline, often confluent, of a reddish or violaceous, yellowish, dusky, sometimes variegated, color, not unlike that of erythema multiforme. In addition, there often exist more or less well-defined, irregularly shaped or rounded, maculo-papules and flat infiltrations, papules and vesico-papules, all in various stages of evolution. Small blebs and pustules, pin-point sized or larger, may also be present, though with the vesicular element predominating it is not usual to meet blebs or pustules of large size nor in numbers. As the disease is in an early or late stage of its existence, will pigmentation and excoriations be slight or marked. Briefly, then, to recapitulate, there exists a mixture of lesions, with no single type predominating, calling to mind in its behavior eczema, although it is far more capricious and protean. It must also be remembered that the process may at any period change its type, such an occurrence usually taking place with an exacerbation or a relapse. Thus, the vesicular variety may exist for a variable period, to be followed in a few weeks or months by an attack of blebs, or it may be pustules, or by a mixture of the blebs and pustules. This mingling of several varieties is a marked and peculiar feature of the disease, giving a very striking dermatological picture, different from that seen in any other disease of the skin.

In conclusion, permit me to summarize by saying that I have endeavored to show:

1. The existence of a distinct, well-defined, rare, serious, inflammatory disease of the skin, manifestly of an herpetic nature, characterized by systemic disturbance, a great variety of primary lesions, by severe itching and burning, and by a disposition to appear in repeated successive outbreaks.

2. That the disease is capable of exhibiting itself in many forms, all having a tendency to run into or to succeed one another irregularly in the natural course of the process.

3. The principal varieties are the erythematous, papular, vesicular, bullous and pustular, which may occur singly or in various combinations.

4. That it is a remarkably protean disease.

5. That the pustular variety is the same manifestation as the disease described by Hebra under the name "impetigo herpetiformis," this being the only form hitherto described.

6. That the several other and equally important forms are worthy of special remark.

7. That the term "dermatitis herpetiformis" is sufficiently comprehensive and appropriate to include all varieties of the process.

8. That it may occur in both sexes, and in women independent of pregnancy.

9. That it usually pursues a chronic, variable course, often lasting years, and is exceedingly rebellious to treatment.

[1] Pathologie und Therapie der Hautkrankheiten, 2te Auflage, Wien, 1883.

A PERIODICAL PAINFUL AFFECTION, BELIEVED TO BE LOCATED IN THE LIVER, ITS CAPSULE, OR BOTH, OR POSSIBLY AN IRRITATION OF THE CAPSULE OF GLISSON.

BY R. HARVEY REED, M.D., MANSFIELD, OHIO.

Read in the Section on Practice of Medicine and Materia Medica of American Medical Association, May, 1884.

Although the anatomy of the Capsule of Glisson was carefully pointed out by Dr. Francis Glisson in his work on "The Anatomy of the Liver" as early as the middle of the sixteenth century; and although occasionally ever since, medical writers have hinted at diseases of this tunic, yet after a review of many of their writings, and after comparing them with the condition we have designated as above, we are forced to conclude that it is a separate and distinct disease, readily recognizable from associate diseases of the liver, and meriting a distinct place of its own in the catalogue of hepatic maladies.

DEFINITION.

For the sake of brevity we will only use the term "Irritation of the Capsule of Glisson," to designate this disease which we believe to be a rheumatoid irritation of a part or all of the connective tissue which forms the inner tunic of the liver and envelops the portal vein, hepatic artery and duct, together with the lobules of the liver.

It is characterized by intermitted pain, of a burning, boring, throbbing, darting or lancinating character, occurring usually at night, but unattended with signs of inflammation, by chill, fever, constipation, loss of appetite or headache.

FREQUENCY.

Whilst quite rare in comparison with the more common hepatic diseases, yet this condition occurs sufficiently often in this region to merit special attention by every practicing physician.

My friend, Dr. J. W. Craig, of Mansfield, Ohio, who has had thirty years of active practice in the profession, and to whom I am indebted for having first called my attention to this condition, reports having treated over one hundred cases in the last twenty years, or an average of five cases a year.

I have seen and treated directly or indirectly twenty-five cases in the last six years, or an average of over four cases a year.

CAUSES.

The causes which seem most clearly to lead to this disease are sedentary habits.

In fact neither Dr. Craig nor myself have ever met with it in strictly active persons, but invariably in those who had led an inactive life, or were more or less confined in their occupations.

Hence it has been observed to occur more frequently in women than in men, and in persons of middle or advanced age than in children or young persons; in fact I never knew of it occurring in the latter.

We have met it oftener in persons engaged in the following occupations or professions than in all others put together; which we have arranged in the relation of their frequency, commencing with the most frequent:

Dressmakers, engineers, ministers, book-keepers, saddlers, printers, shoemakers, tailors, sewing-machine agents, merchants, and one case in that of a boiler-maker, and one occurring in a farmer's daughter.

It is seldom found in persons addicted to intemperate habits, but rather in persons of unquestionable temperate habits and with no history of syphilis either constitutional or acquired.

This disease has been noticed to occur most frequently during those times of the year when rheumatism is most prevalent, although it may occur at any time.

SYMPTOMS.

The premonitory symptoms of this disease come on so insidiously, that the patient is scarcely aware that he is afflicted with more than a "slight colic," or a "touch of neuralgia," or "the cramps," as they will often express it, until it gradually increases in frequency and severity, and perhaps his attention is called to the fact of its periodical returns every few nights, which very greatly disturbs his nocturnal rest.

He generally goes to bed feeling perfectly well, but after a few hours' sleep is awakened with burning, shooting pains in the region of the liver, which keep him awake or compel him to walk his room for an hour or so, or perhaps till morning, before it subsides.

Generally by morning, in the less advanced stages of the disease, the pain subsides and the patient feels as well as usual, and goes to his work thinking "that is all there will be of it," until in a few days he has a repetition of the same, excepting it has increased somewhat in severity, or is more prolonged than the previous attack.

Thus it creeps on gradually, until the attacks of pain become so severe as to warrant his calling a physician, who may find his patient walking the room in agony, or rolling from side to side of the bed, or sitting tailor fashion with the arms folded across the bowels and rocking to and fro. This motion he will sometimes keep up for hours, asserting that "nothing else gives him as much relief," or that "he would die" if he were to stop it.

Upon interrogation, it will be found that these attacks, which at first were weeks apart, are now separated by an interval of a few days only; or perhaps they occur every night, generally coming on about the same time each night, and with but few exceptions after the patient had fallen asleep.

After the attack subsides the patient feels somewhat exhausted, with perhaps a slight tenderness over the hepatic region, but otherwise appears to be in usually good health—so much so that he imagines every attack is certainly the last, until experience induces him to be skeptical of the most favorable symptoms.

If relief is not afforded, these attacks, which at first only last a few minutes, will gradually increase in duration to several hours, or even days, with but very slight interruption.

The pain in these attacks is described as burning,

boring, cutting, shooting, aching, throbbing or lancinating, generally, however, of the character of the first two, sometimes described as a "coal of fire in their right side."

It is confined almost entirely to the hepatic region, at times almost entirely to the front and right side, and at others extending around to the back, but seldom any pain is complained of on the left side.

A physical examination reveals a normal or but slightly accelerated pulse, and a normal temperature, a moist, although at times a slightly furred tongue, little or no headache. Occasionally there is a slight sallowness of the skin in the advanced stages of this disease, but there is seldom jaundice.

The appetite is usually good, although at times it is irregular, and occasionally it is poor. Now and then there is vomiting, which generally comes on during a severe attack of pain, when present at all, I having seen it in only one case, and Dr. Craig in but a few.

An examination of the liver reveals but slight enlargement at any time, and often none at all; and but little tenderness even during the attack, and little or no tenderness in the intervals except in cases of long standing.

There is no perceptible hardening of the gland or tendency to a nodulated or so-called "hobnailed" condition.

The bowels are seldom constipated, except in cases which, as patients say, are "naturally so."

The stools are normal in color, regularity and consistency, and after repeated examinations have never been found to contain gallstones.

The urine is generally normal in color, quantity and chemical composition.

The skin is moist, and there is but slight emaciation or general debility, except in very advanced and long continued cases.

DIAGNOSIS.

The diagnosis of this so-called irritation of the capsule of Glisson, whilst somewhat difficult at first, will soon be found to have such distinctive features centered around it, as to render this malady easily distinguished from associate abnormal diseases of the hepatic gland.

The diseases for which it might be mistaken are the "passing of gallstones," "interstitial hepatitis," "congestion of the liver," "perihepatitis," "inflammation of the bile-ducts," "cirrhosis" and "hepatalgia."

If the following differences are borne in mind, there will be little or no danger of mistaking this disease for the passing of gallstones:

PASSING OF GALLSTONES.	IRRITATION OF THE CAPSULE OF GLISSON.
The attacks commence suddenly, and may reach their maximum of severity in the first attack.	The attacks do *not* commence suddenly, but come on gradually, increasing in severity with each returning attack.
The attacks may come on at any time, often just after a meal, a drive over rough roads or violent exercise	The attacks nearly always come on at night, seldom immediately after a meal or violent exercise.
There is frequent vomiting.	Seldom any vomiting.
Colicky, tearing pains.	Burning, boring, throbbing pain.
Marked temporary jaundice may occur from obstruction.	Seldom ever is there any jaundice.
A careful examination of the fæces will often reveal gallstones after an attack.	Gallstones are never found in the stools after an attack.

A careful observation of these few differential symptoms will seldom fail to enable the practitioner to make a clear diagnosis between these two conditions. It is possible to confound this disease with interstitial hepatitis, although it is generally very easily distinguished by the following differences:

INTERSTITIAL HEPATITIS.	IRRITATION OF THE CAPSULE OF GLISSON.
Generally associated with alcoholic intemperance.	Seldom associated with alcoholic intemperance.
Venous stigmata on the cheeks	No venous stigmata on the cheeks.
Pain and irritation over the liver more or less constant	Pain coming and going in paroxysms.
More or less jaundice.	Sometimes slightly sallow, but seldom jaundiced.
Nausea and vomiting, especially on first rising in the morning.	Seldom any nausea or vomiting.
Loathing of solid food, particularly in the morning.	Appetite generally good, or but slightly impaired.
Diarrhœa and constipation alternating with each other.	Bowels seldom out of order.
Urine very scanty and dark colored.	Urine generally normal or nearly so.
Occasional pyrexia.	Seldom, if ever, any pyrexia.
Often portal obstruction.	No portal obstruction.
Enlargement followed with contraction of the liver.	Seldom any or but slight enlargement, and never followed by contraction of the liver.
Often has a distinct syphilitic origin.	Seldom has a clear syphilitic origin.
Sometimes comes on with a chill.	Never has been known to be preceded by a chill.
May have ascitis.	Never has ascitis.
Emaciation and general debility.	Emaciation not marked, and but slight or at times no debility.
A dry, harsh skin.	Skin not dry and hard.

By a comparison of the following diagnostic points, we can readily distinguish this disease from hepatic congestion.

CONGESTION OF THE LIVER.	IRRITATION OF THE CAPSULE OF GLISSON.
Enlargement of the liver.	Little or no enlargement of the liver.
A continued feeling of tightness, or painful distention over the liver.	No feeling of tightness or distention, but a deep burning, boring, lancinating pain of a paroxysmal character.
Jaundice is nearly always present.	Jaundice is seldom present.
Nausea and loss of appetite.	Seldom nausea or loss of appetite.

Indigestion, furred tongue and headache.	Seldom troubled with indigestion, but slightly furred tongue and seldom any headache.
Vomiting and often diarrhœa, or both.	Seldom any vomiting or diarrhœa.
More or less dyspnœa.	Seldom ever the slightest dyspnœa.
More or less stupidity and drowsiness.	Seldom any stupidity or drowsiness.
Often signs of obstruction to portal circulation.	No signs of obstruction to portal circulation.
Urine scanty and high colored, with more or less bile.	Urine normal or nearly so.
Temporary albumenuria often occurs.	Albumenuria has never been known to occur.
The attacks continue without interruption until the congestion subsides.	The attacks come on by paroxysms, between which the patient feels quite well.

Irritation of the capsule of Glisson may also be confounded with perihepatitis, which is more particularly an inflammation of the peritoneal covering of the liver, which inflammation may also extend to Glisson's capsule, which is generally the result, or it may be the consequent of acute peritonitis, or some organic disease of the liver.

It may also be the result of traumatic causes, or the spreading of inflammation from adjacent tissues, and is always ushered in with a chill and followed with fever, pain, and superficial tenderness, together with all the symptoms of inflammation.

On the other hand, in irritation of the capsule of Glisson, there is no peritonitis, and it is not ushered in with a chill or followed by fever or inflammation, and is not continued without interruption, but is paroxysmal and free from fever and inflammation.

The chief diagnostic points between this disease and "inflammation of the bile ducts" may be briefly summed up as follows:

INFLAMMATION OF THE BILE DUCTS.	IRRITATION OF THE CAPSULE OF GLISSON.
Generally met with in children or old, gouty persons.	Never met with in children, and not more frequently in old, gouty persons than ordinarily healthy persons of middle age.
Partial or complete obstruction of the bile ducts.	No obstruction of the bile ducts.
Jaundice.	No jaundice.
Preceded by gastro-duodenal catarrh.	Not preceded with gastro-duodenal catarrh.
Usual signs of inflammation.	No symptoms of inflammation.
The inflammation usually commences in the mucous membrane of the digestive canal and extends from there to the bile ducts.	No inflammation of the digestive tract, and is not communicated from the alimentary canal.
Pulse is abnormally slow.	Pulse not particularly changed.
Frequently the stools contain no bile.	The stools are usually normal.

The differential diagnosis of "irritation of the capsule of Glisson" and "cirrhosis of the liver" will require some attention. Whilst it is generally easy, there are points of similarity which might be the means of leading the unguarded astray.

CIRRHOSIS OF THE LIVER.	IRRITATION OF THE CAPSULE OF GLISSON.
Is often the result of chronic interstitial inflammation.	Is not the result of chronic interstitial inflammation.
Intemperate habits very frequently cause cirrhosis.	Is not caused by intemperate habits.
Is found in males oftener than in females	Is found in females oftener than in males.
Is nearly always fatal.	Has not been known to be directly fatal.
Is frequently the result of syphilis.	Is not necessarily the result of syphilis.
All the general symptoms of acute congestion of the liver, together with those of gastro-enteric catarrh.	Seldom any marked symptoms of hepatic congestion or gastro-enteric catarrh.
Marked constitutional disturbance.	Little or no grave constitutional disturbance
Frequently there is ascites.	Never has been complicated with ascites.
Hæmorrhage from the stomach or intestines	Never have hæmorrhage from the stomach or intestines.
Enlargement of the spleen.	No enlargement of the spleen.
Digestive disturbance very prominent.	Digestive functions seldom disturbed.
As the disease advances the acute pain subsides.	As the disease advances the acute pain increases.
Jaundice in the commencement of the disease, but often more in the advanced stages.	Jaundice seldom is present, and if present at all is more apt to occur in the advanced stages.
Diminution of hepatic dullness in proportion to the contraction.	No diminution of the hepatic dullness.
Nodulated feeling of the surface of the liver	No nodulation of the hepatic surface.
Dry, harsh skin, with flabby tissues.	Skin not dry and harsh, and the tissues not flabby.
Often extensive ecchymosis and hæmorrhage from the mucous surfaces.	No ecchymosis, and never any hæmorrhage from the mucous surfaces.

Irritation of the capsule of Glisson might possibly be mistaken for hepatalgia.

The supply of nerves, however, to this organ, being scanty in comparison to its size, most of which are supplied from the solor plexuses, with a few branches from the pneumogastric, which follow the ramifications of the hepatic artery, would impress us at once, that it is an organ not particularly predisposed to neuralgic affections, and when present at all, will always be found in extremely nervous or hysterical persons, and most generally in females about the time of their menses.

This disease is so rare that Dr. Murchison says: "I do not remember to have met myself with an unmistakable example of hepatic neuralgia."[1]

Since hepatalgia is a purely functional disease, and occurs so rarely, when it does occur, a careful observation of the general appearance and history of the patient, together with the causes and symptoms of the two diseases, will readily enable the practitioner to diagnose between these two morbid conditions.

DURATION.

Irritation of the capsule of Glisson, if not arrested, may continue for months or even years, with a gen-

[1] Clinical Lectures on Diseases of the Liver, p. 485.

eral tendency to get worse—the attacks coming on more frequently and increasing in severity, with no tendency whatever to get well itself.

PROGNOSIS.

The prognosis of this disease is exceedingly favorable. Whilst it may linger for months, and in a few cases I have known it to continue for years, neither Dr. Craig or myself have as yet ever seen a fatal case. If, however, it is subjected to proper treatment, it usually subsides in a much shorter time—from a few days to a few weeks, under such treatment, the attacks come on less frequently, continue for a shorter time, and are much less severe each return, until they disappear entirely, and the patient returns to the enjoyment of his usual health.

On the other hand, I have seen these cases resist the most vigorous line of improper treatment for months, and even years, which yielded to suitable remedies in a few days or weeks, and have never had a return of the disease since.

COMPLICATIONS.

The complications which are most likely to occur with this disease are rheumatism, and occasionally malaria, although any of the diseases to which the liver is subject may be associated with it.

PATHOLOGICAL ANATOMY.

No fatal cases having occurred either in my own practice or in that of my friends, I have therefore, as yet, nothing to offer on the morbid anatomy of this affection.

TREATMENT.

I know of no disease which is more satisfactorily influenced by a proper treatment than the one we are now considering, and also know of none which is more tenacious when not properly treated.

The remedies which have given the most satisfactory results in this malady are alkalies combined with a bitter tonic.

The combination most frequently used by Dr. J. W. Craig, and one which I have found very satisfactory (excepting its disagreeable taste) is the following:

℞ Sodii bi-carb..... .....ʒiv.
Pulv. hydrastis can.....ʒi.

M.

S. Use a teaspoonful in two-thirds of a glass of water before eating.

If, however, there is a tendency to constipation, I have found the following to give prompt relief:

℞ Sodii sulph., C. P.....ʒv.
Hydrastia sulph.....gr.v.
Aquæ .....ʒiii.
Glycerinæ, q. s. ad.....ʒiv.

M. S.—ʒi before each meal and before retiring.

Sodii et pot. tart. combined with infusion of gentian has given good satisfaction in some cases, or a Seidlitz powder before each meal, followed with a capsule of cinchoniæ sulph. and pepsin after eating, especially if there is any complication of malaria or gastric irritation.

My experience in the large majority of these cases has prejudiced me in favor of the first two formulæ, which indicate the general line of treatment I have been most successful with, but which must be modified to suit each particular case.

Where there are marked rheumatic complications good results may be obtained by combining the soda with salicylic acid (that made from the oil of wintergreen is preferred) or salicin, to which may be added the iodide of potassium and ext. of colchicum seed.

Mercurials, as a rule, are not well tolerated—in fact, they have always seemed to aggravate the disease every time I have used them in it.

All stimulants as well as condiments are better avoided, and the patient advised to live on a good nutritious diet, and eat regularly and take plenty of exercise.

Frequent baths of chloride of sodium or the hyposulphite of soda, followed with a brisk rubbing, will very materially assist the treatment, while active exercise should be speedily substituted for the sedentary habits generally practiced by this class of patients.

Frequently the physician is called in the midst of one of these severe attacks of pain, and is urged to give speedy relief.

This can be best accomplished by a hypodermic injection of an eighth or a sixteenth of a grain of sulph. of morphia. Hot fomentations, hot water bags or hot bricks applied over the hepatic region, assist very much in affording relief to the sufferer.

The use of anodynes, however, either internally or by hypodermic injection, should be suspended at the earliest possible moment, for they retard the improvement so desirable in every case.

In order to illustrate this disease, I will report a few cases, which may be fairly considered average cases:

Mrs. A., æt. 38. Had been married for ten or twelve years. Was a large, muscular, robust woman, and had always enjoyed good health. Had no children, and no history of ever having had a miscarriage. Had lived most of her life on a farm, but in late years had moved to town and engaged in dressmaking, which kept her closely confined early and late, with but little exercise.

Was first taken ill in 1877, and suffered very much for several weeks, so that she was compelled to give up her work, and returned home and went at housework. In a few weeks she had improved so much that she returned to the dressmaking again.

In 1878 she was taken ill again, and called on her family physician for relief. The persistence of the trouble compelled her once more to give up her sedentary habits, after which her health soon began to improve; but on returning to it was soon attacked more severely than ever, and feeling discouraged changed physicians.

It was evident from her description of the treatment that her former physician had been treating her for malaria. After she had taken treatment for some time with the second physician, it was evident that he too was not meeting with success, and the author was invited to see her, who was also led astray by the periodicity of the attacks which always came on at night.

Having ascertained that both her medical attendants had freely given her of mercurials and quinine

together with morphia to control the pain, and without any success, I was at once impressed that there was something peculiar about the case not yet observed.

When first called I found her sitting on a lounge "tailor fashion" with arms folded across the bowels, rocking to and fro and crying with pain which she located in her right side.

It was described as a burning, boring, lancinating distress, over the region of the liver. She informed me she had been feeling pretty well during the day, and had retired feeling comfortable; but in a few hours was awakened with this severe pain. She informed me she had been having these attacks almost every day of late, and that they were getting very much worse. I also learned from my patient that they did not come on with a chill, that her appetite was good and her bowels regular except when she took morphine to relieve the attacks of pain.

I found her pulse slightly excited, but otherwise normal, the tongue was moist and but slightly furred; no aching in the back or limbs.

I found she had been taking morphine so long that it had but little or no effect on her except in large doses, consequently I put her on an anodyne consisting of cannabis indica and hyoscyamus, and applied hot applications over the seat of pain, and supposing it to be of malarial origin, put her on quinia and arsenic.

On returning the next day I found my patient up and around her work and apparently well. I left her some rhubarb to open the bowels, ordered the anodyne discontinued and the quinia and arsenic vigorously pushed.

I obtained some urine for chemical and microscopic examinations, and suspecting gallstones, ordered the feces kept and carefully washed, with a view of capturing any offending material of that character.

On examination I found the urine quite normal, and repeated washings of the stools failed to reveal any gallstones, which increased my faith in the malarial hypothesis.

The second night following I was again called about midnight, and found her repeating the drama of the night before, only if anything worse, which, in spite of all my treatment continued to grow worse.

The case was examined and reëxamined, there was no jaundice, no enlargement of the liver, little or no indigestion, no headache to speak of, no chills, and no fever, or sweating except the perspiration induced by the severe pain, and still these attacks of pain kept on getting worse in spite of all my efforts.

I finally advised counsel and requested the family to call Dr. Craig, of Mansfield (the author was then a resident of West Salem, some thirty miles distant from the above place), who came in a few hours and diagnosed the disease an irritated condition of the capsule of Glisson—a malady which at that time the writer was not at all familiar with.

The doctor advised me to put the patient on sodii bi-carb. combined with pulv. hydras. canadensis, to be given in water previous to each meal; he advised the continuing of the hot applications when the attacks of pain came on, and if absolutely necessary some suitable anodyne until she could endure the attacks of pain without it. Under this treatment my patient made a rapid and complete recovery and now, over six years after, has never had a return of the disease since to my knowledge.

CASE II. Mr. B., æt. about 35, a saddler by trade, who was under the care of a neighboring physician for months, without any improvement, but rather grew worse. The doctor finally became discouraged and presented him as a clinical case at a meeting of the Northeastern Ohio Medical Association for counsel and advice.

Prof. D. B. Smith, of Cleveland, together with Dr Starr and myself, were appointed to examine his case.

Dr. Bucher stated that his patient was very greatly harrassed with periodical attacks of pain coming on after he had retired, almost every night.

He stated that his patient would work all day at his trade, but after retiring, would be awakened by a severe pain located over the region of the liver, of a burning, shooting character.

These attacks were progressive in severity and frequency until they were occurring almost every night, and were so severe as to deprive him of most of his night's rest.

On inquiry, he revealed no history of syphilis or intemperance, and none of malaria except the periodical nature of his attacks of pain, but lest there should have been some mistake in his history, Dr. B. said he had treated him at different times most vigorously for the first and last maladies, but without relief. He had searched carefully for gallstones in vain, examined the urine and found it normal, had given him liberal doses of mercurials, "in fact" (to use the doctor's words) "I have had him over the materia medica from beginning to end, and nothing I have given him has done him any good."

After a careful examination it was agreed on by the committee that he had "irritation of the capsule of Glisson," and accordingly he was put on the soda and hydrastis treatment, as previously described in this paper.

In a few weeks after I received a card from the doctor stating that his patient was feeling quite well, that he soon commenced to improve after putting him on the prescribed treatment.

More than a year after I met the doctor, who told me that the patient had made a complete recovery, and was now enjoying good health.

CASE III. Dr. B., æt 75, a clergyman, who had always been a close student, called on the writer in March, 1882, and gave the following history:

In December, 1881, he began to suffer some from distress, which he referred to the stomach, although the appetite remained fair; he informed me that he had been troubled more or less with distress up to February, 1882, when he discovered that eating lemons gave him relief, until about the first of March, when the burning pain commenced under the short ribs on the right side, generally coming on at night.

Notwithstanding he was under the treatment of his family physician, he observed this pain was steadily increasing, both in severity and frequency, until it came on almost every night; subsiding during the

day only to awaken him the following night, until it grew so bad that he decided to change his medical adviser and called the writer.

When I first saw him he was suffering intensely with a burning pain in his right side, which, after eliciting the above history, awakened my suspicion of the existence of irritation of the capsule of Glisson. This suspicion was increased when he informed me, he had been able to continue his clerical duties up to the present, although, as he said, he could rest but little on account of the intense agony he was obliged to endure at night.

On examination, I found the pulse normal and the patient free from fever, tongue moist, and but slightly furred, appetite good, stools about normal, and free from gallstones; there was slight constipation at times, urine but slightly changed; some tenderness over the liver, but not much, with very slight enlargement, no jaundice, although his complexion was at times somewhat sallow.

There was no headache or drowsiness, and he was free from backache, or pain in the limbs.

These symptoms, together with his history, confirmed my opinion as to it being a case of irritation of the capsule of Glisson I had to deal with.

I put him on sodii bi-corb. and pulv. hydrastis canadensis, to which I afterward added a tonic of gentian with an occasional laxative dose of sodii et pot tart, which was interchanged with an occasional vegetable laxative.

Hot applications were made over the liver during the attacks of pain, but did not resort to the use of anodynes.

In a few days I found my patient beginning to improve, the attacks of pain becoming less severe, and not so frequent; and in less than a fortnight I was enabled to dismiss him, feeling quite comfortable, the attacks having subsided entirely. He continued the use of the sodii and hydrastis, however, for a few weeks after he was dismissed.

I saw him a few days before I left home, and he reports never having enjoyed better health in his life, and has had no threatening of the return of the disease since.

Were it necessary, I might multiply these reports, but the above cases which have been selected as typical cases, and which have occurred along with many others, at intervals covering a period of six years, will serve to illustrate the disease I am endeavoring to describe.

In presenting this paper I do not expect to escape criticisms. I am fully conscious of its incompleteness, and regret my present inability to accompany it with more thorough and satisfactory investigations than those furnished.

This paper may, however, serve to call the attention of others to the train of symptoms herein illustrated, and that they may in this manner be ultimately properly explained.

THE COMMUNITY OF ORIGIN OF DIPHTHERIA, TYPHOID FEVER AND SCARLATINA.[1]

BY E. O. BARDWELL, M.D., OF MOLINE, ILL.

It will not be expected that the writer of a paper with the above title will be a warm advocate of the theory of specific germs in the etiology of disease, it would hardly be consistent for him to evolve a little germ for each of the three diseases from the same ultimate elements, even for the sake of effect.

I do not wish to be understood as disparaging or discrediting the immense value which the microscope has been, and still is, to scientific medical research, but it is well enough to remember that any valuable acquisition is easily and frequently overvalued by enthusiasts.

The presence in the air of minute organisms has been known for years. A century since, when the microscope was a mere plaything, Goethe in his inimitable work "Faust," made Mephistopheles say, "from air, water, earth, in wet, dry, hot, cold, germs by thousands evolve themselves, had I not reserved fire, I should have nothing apart for myself." The air is pregnant with minute life, and it seems easy to comprehend that disease or its elements being present it might be diffused by these floating particles without creating separate germs for the sole purpose of evolving or transporting each disorder.

According to the germ theory of disease a different form of bacteria, considered from a morphological standpoint, is essential to the causation of each disease of known bacterial origin. The three divisions of bacteria are, micrococcus, the granular forms; bacillus, rod-like in appearance, and spirillum which exists in the form of twisted threads, and is not conclusively proven to belong to the bacteria. Micrococcus is divided into many forms by the morphologist, as is also the bacillus, the mutability or stability of these different forms is not yet, however, thoroughly established.

In diphtheria, micrococci and bacilli are found in large numbers in the fauces, the former being the most constant in their appearance. Prof. Gradle, one of the latest writers on the germ theory, and an earnest advocate of its truths admits, however, that "*there is as yet no proof that these micrococci are the cause of the disease.*"[2] In fact experiments would seem to show that so far as known at the present time the presumptive evidence is all the other way.

In typhoid fever a bacillus has been found which has been held to play a part in causation, the most careful observers, however, have failed to find these bacilli in one-half of the cases of enteric fever examined. Koch was one of the observers, and he is probably the best bacillus hunter known at the present time, when we add to this the fact that in no well authenticated case has inoculation experiment propagated the anatomical lesion of typhoid fever in any animal; we must admit that the bacilli causing this disorder have not yet been demonstrated.

[1] A paper read before the Iowa and Illinois Central District Medical Association, April 10, 1884. Published by request of the Association.

[2] The Germ Theory of Disease. P. 186, 1883.

In scarlatina both micrococci and bacilli abound in numbers, but no one has shown by experimental cultivation their relationship to the disease.

There are a few disorders in which the causal relationship of bacteria has been apparently proven, but our three diseases are not among the number.

This paper deals with its subject and deduces its conclusions from a purely clinical standpoint, and the bacterial etiology has been alluded to merely to show that there is at present nothing positively known to refute the results logically arrived at from clinical data.

But whatever our opinion of the germ theory may be we must, I think, admit that improper sanitation plays an important part in the etiology of diphtheria, typhoid fever and scarlatina.

I shall present some facts and adduce some examples which appear to me to support the proposition that these three disorders owe their origin to a common source, that the same nidus may cause at one time the evolution of one malady, and at another time of a different one. What the peculiar predisposing force consists of which favors the production of one disease in preference to another, it is impossible to say, although various hypotheses with pages of text to support them might easily be written.

EXAMPLE No. 1. In northwestern Pennsylvania at the source of a small stream whose waters ultimately mingle with the Susquehanna, fifteen miles from a sewer, in a narrow valley is situated a lumber camp. Each season for four years prior to 1882 one or more cases of typhoid fever have been developed in this camp. In 1881 four men contracted the disease from which one died. In 1882 there were no cases of fever but two men were brought out ill with diphtheria, previously there had not been a case of the kind in the camp and the patients had not been within fifteen miles of diphtheria within a year.

Situated among the health-giving hills away from all modern improvements, here we have two of the products of civilization showing themselves "without any outside help."

Around this building the ground is soaked with refuse from the kitchen thrown out the door and windows; within two rods in one direction are placed the stables; about the same distance in another course we find a stagnant pool containing decaying vegetable and some animal matter; going up stairs we see twenty bunks ranged along either side of the low loft, about one foot apart, with a passage way slightly over two feet wide down the center; in these twenty bunks forty men sleep every night with the most of their clothing on. and still they live, some of them.

EXAMPLE No. 2. Eight miles from Emporium in a different direction is situated another camp, also in a valley. The foreman, his wife and two children did live four years ago in a small house built for their accommodation a few rods below the camp; a babbling brook ran by the door and the house seemed pleasantly situated. In the summer of 1880 one of the children contracted scarlatina without having been away from home or having had visitors for three months. In the fall of the same year both had diphtheria, from which the youngest died. The following spring the remaining child was taken with typhoid fever, and acting upon my suggestion the family moved to town; the girl recovered in three weeks and has since been well. The murmuring stream brought down with it much of the refuse from the camp above, and frequently overflowing its low banks, deposited a certain portion thereof in close proximity to the dwelling, which, surrounded by thick trees, was not in a favorable location for the mountain breezes to carry off the noxious vapors. The woods around the house containing decaying vegetation, would perhaps have some work to perform in the production of disease; tree trunks in all stages of decay, layer upon layer of decaying and decayed ferns, grasses and leaves, the accumulation of years, periodically soaked with water, would perhaps be liable to generate gases which would not be particularly conducive to human health. Be that as it may, the three diseases were developed there under these conditions.

EXAMPLE No. 3. Four miles from this last-mentioned locality lives a farmer with a wife and seven children. In 1880, four of the children had scarlet fever; in the summer of 1881 one of the children had typhoid fever; in the fall of the same year the oldest child, a girl of 16 years, contracted typhoid fever from which she died. Three months later one of the children who had not had scarlatina took it, and two months later one of the others was taken with diphtheria.

The house is situated on rising ground, the water supply is apparently pure, and the surroundings are in good sanitary condition. I had no idea there was a cellar under the house, as no indications of one were visible. However, after the last case I made an inquiry which I should have made long before, and found not a cellar, but a pit underneath the dwelling, ingress to which was through a trap-door from the kitchen, merely a hole dug in the ground and sided up with hemlock boards decaying from the moisture. No ventilation was possible, and although it was comparatively clean as such holes go, yet used as a place of storage for vegetables, its atmosphere was necessarily far from salubrious.

I pointed out the danger and advised Mr. C. to fill up the hole, and my advice was acted upon; this was in the spring of 1882, since which time there has been no sickness in the house.

EXAMPLE No. 4. Down a valley eight miles distant stands a saw-mill surrounded by laborers' dwellings. Usually one or more cases of typhoid fever are developed in this valley each season; during the year of 1882, however, there were no such cases, but in December and January following, diphtheria was prevalent in the neighborhood of the mill, 30 cases occurring during that time, with a mortality of six. About two months later scarlatina in a mild form made its appearance and continued several months.

The first case of diphtheria occurred in a house where I could discover no sanitary irregularities, but this house was only a few rods from another habitation where the next six cases occurred two days later, and the condition of this latter was such that I cannot hesitate to believe that the first case was caused

by contiguity to it. If diphtheria or scarlatina were imported into this locality they were brought in a very clandestine manner, and the carrier was extremely careful to drop no seeds on the way, as the two diseases were confined to this small area, about two miles long by one-half mile wide.

EXAMPLE No. 5. A valley nine miles long reaches out nearly at right angles to the one just mentioned. There have been in this valley one or more cases of typhoid fever every year for twelve years prior to 1882, during which season there did not occur one case. In September, 1882, however, diphtheria broke out to the extent of 15 cases with 4 deaths. The disease in this instance made its appearance eight miles up the valley, in a house where the cellar was in a filthy condition from decaying vegetables and stagnant water; the force of the endemic was expended on a few families in this immediate locality. It is a fact worthy of note that there were no cases of typhoid fever in this valley in 1882 for the first season in 12 years; and that the evolution of diphtheria evidently consumed the material which under other subtile conditions would have been used in the production of fever. In neither of the examples adduced was the outbreak of diphtheria general enough in character to explain the absence of fever by saying that most of the people having one disease, they therefore enjoyed immunity from the other. In the valley just alluded to typhoid fever again put in an appearance in 1883.

Judging from these cases, I cannot arrive logically at any other conclusion than that these three diseases are originally caused by disregard of the laws of hygiene. Their spread after development is another question entirely, and one with which we have at the present time no concern more than to venture the remark that the innocent inevitably suffer with the guilty; the persons whose doors are kept clean suffer the penalty of allowing their neighbors to live in ignorance of plain sanitary laws. If improper sanitation is the primordial factor in the evolution of these disorders, then it is not so important to ascertain in just what form and by what means disease is disseminated, as it is to strike at the root of the evil, to annihilate the first cause, without which there can be no elements of disease to be carried about by the air, by innocent micro-organisms, or by distinct varieties of minute life created for this especial purpose. As practical physicians, it is not a matter of great clinical importance whether or no bacteria are really the causes of these diseases and filth the nidus for their development. No remedy is known which will kill bacteria in the system without killing the patient, but we can remove in some cases the causes of ill health, whether it is really due to bacteria or not. Some people can be taught the danger of unsanitary surroundings, but many more will learn only when compelled to do so. The physician can instruct to a certain extent, but his advice would have much more weight if it was known that compulsion might follow its disregard.

The only body to successfully manage the education of the masses on this subject would be a carefully organized Board of Health with practically unlimited power. When every town and hamlet has a health officer properly qualified and not afraid to do his duty, then will most diseases be lessened in severity, and in all probability some will disappear entirely.

A CASE OF URETHRAL ECTASIA.

BY C. C. FITE, M.D., NASHVILLE, TENN.

The description of a case of urethral ectasia or vaginal urethrocele by Professor Santesson in the *Nordiskt Medicinskt Arkiv*, which you reprint in the Aug. 16 number of the JOURNAL prompts me to report a case of the same kind I saw in March of this year. I did not know that the condition was so rare or I would have put it on record at the time.

I had been engaged to treat Mollie H. for what she designated "Womb disease," and in making the necessary examination to ascertain the position and condition of the parts, I made the following discovery. In passing the finger a tumor was felt just under the urethral orifice, and she said at once, "There it is, that is the trouble, it don't hurt much to pass it or to have intercourse, but it pains me in walking and when I make water, and sometimes it takes a long time to pass it, and occasionally it dribbles away of itself."

Upon more careful inquiry she admitted that coitus was painful, unless they were careful, but as she was very fond of that amusement she tried to make no complaint.

She is a muscular, ordinarily healthy white woman 24 years of age; married at 15, has had two children, one born 10 months after marriage, and the second in 13 months from the first; has miscarried twice, about the third month, since that time. She had difficult labor with both children, but got through without instrumental interference. After the second birth she says she had "inflammation of the womb, and of the bladder, and the milk dried up."

There is no history of any other severe illness or disease of any kind.

She had been instructed to retain her urine for some hours before the examination, as I find it sometimes of value to examine with a full bladder, and then after it is emptied. A silver catheter was passed and went readily into the bladder, and on being partially withdrawn the point was turned down, and the nature of the trouble was clearly demonstrated. The catheter was again passed to the bladder, and the contents withdrawn. When the instrument was being released from the meatus she complained of a sharp burning pain which lasted some minutes, she said that it always pained her so after urination.

I was satisfied at once of the nature of the case, and explained that the uterus needed no special treatment (having used a modification of the Sims speculum, and completed the usual explorations and found only a slightly enlarged and heavy organ), and advised an operation to reduce the size of the distended canal.

She was opposed to this and would not consent to operative measures, but was "willing to have medicine put on it," so I made three applications a week apart, of a 20 gr. solution of nit. silver, to the relaxed membranes covering the sacky canal.

After the applications the vagina and vulva were packed with absorbent cotton which was retained six hours. I also ordered injections of claret and tannin, ℈i to f℥viii, twice daily. She reported herself as well two weeks after the last application, but as she is now living elsewhere I have not been able to verify the statement. I explained to her that the cure was likely to be only temporary, and that an operation would doubtless be yet needed as the dilated canal had only been braced up and not organically reduced to its normal size. The trouble dated from the second labor, and I suppose the protracted pressure of the fœtal head against the urethra must have caused the relaxation of its fibre.

MEDICAL PROGRESS.

SURGERY.

THE TREATMENT OF EPILEPTIFORM NEURALGIA.—Mr. W. J. Walsham (*Practitioner*) describes this disease as characterized by neuralgic paroxysms occurring in one or more branches of the fifth nerve, and always confined to one side of the face. The pain seldom lasts more than half a minute; begins at one spot, thence centrally spreads along that branch, and is radiated to the other branches of that division; or it may be transmitted to a second, or even to a third division of the fifth. A paroxysm may be determined by very various causes—speaking, eating, washing the face, a draught of cold air, a sudden noise, pressure on a certain spot, a fly settling on the beard—in short, anything, even of the most trifling nature.

In the treatment, nothing but nerve-stretching proved effectual. In the first case the infra-orbital nerve was stretched. The neuralgia was of ten years' duration, and for two years the patient was bed ridden on account of it. Three years after the operation she continued perfectly relieved. The second case was of nine years' duration, and the auriculo-temporal and inferior dental nerves were stretched, with complete relief to pain. The third case was one of relief from stretching the inferior dental, as with the fourth and fifth, the latter being a man 73 years of age, who had no bad symptom. The sixth case was a man 59 years of age, who had suffered for upwards of fourteen years, and had had the supra-orbital and infra-orbital stretched on various occasions. It was found impossible, from the matting of the tissues, to stretch them again. On careful examination it was determined that the pain really began in the gums in the region of the molar teeth, *i. e.*, in the posterior dental nerves, and shot upwards towards the back of the orbit. Meckel's ganglion and the whole of the superior maxillary nerve, from the foramen rotundum to where it emerges upon the cheek, were removed. There was no bad symptom, and there was no recurrence of the pain.

As to the operation itself, the modes of stretching the supra and infra-orbital nerves are well known. The inferior dental, Mr. Walsham thinks, is best exposed from within the mouth. The mouth having been opened by a gag, an incision through the mucous membrane only is made from the last molar tooth in the upper jaw to the last molar tooth in the lower. The finger is now introduced into the wound and insinuated between the ascending ramus of the jaw and the internal pterygoid muscle. The small spur-like projection of bone at the entrance of the inferior dental canal is next felt for, and serves as a guide to the nerve. An aneurism needle with a very short curve is now passed and hooked round the nerve, which can then be drawn visibly into the entrance of the wound. There are no important structures with the exception of the inferior dental artery and gustatory nerve in the near neighborhood. The latter is best avoided by remembering that whilst the inferior dental nerve passes into the bone the gustatory continues its course between the bone and the muscle, and is anterior and a little internal in its relative position to the inferior dental. Should the artery be wounded, it will probably be torn rather than cut, and therefore not likely to bleed, were it to do so, it is doubtful whether it could be tied.

The internal lateral ligament which is inserted into the spur-like process of bone, follows somewhat the same course as the nerve and may be mistaken for it. To avoid it the point of the aneurism needle should be made to hitch in the entrance of the canal, and thence swept upwards, backwards and outwards around the nerve, keeping the point close to the bone. The wound, if the operation is neatly done, is small, and heals kindly and in a few days.

In stretching the auriculo-temporal nerve the best guide is the temporal artery. An incision about an inch long should be made parallel and immediately posterior to the artery, beginning at just above the zygoma. Having carefully exposed the artery, the nerve will be discovered just below and posterior to it. The nerve being of small size the dissection must be done neatly, or it will not be found.

MEDICINE.

INVESTIGATIONS INTO THE PATHOGENETIC MICROBIA OF BLENNORRHAGIA.—Edouard Welander gives us in the *Nordiskt Mediciniskt Arkiv* the results of his studies of the *gonococcus* as described by Neisser in 1879. These microbiæ are easily stained by a solution of 1 to 2 per cent. of fuchsine, and they are easily obtained from the male urethra by pressing the glass against the meatus while expressing the pus with the fingers; with the female urethra it is not so easy, here the end of a canulated sound is introduced and pressed against the walls of the urethra while removing it.

The gonococci are colored a blackish brown by the fuchsine, the nuclei giving an intense red, and the

protoplasm a light red. They are found almost always in groups, never in chaplets, as often in the interior as external to pus cells, frequently in large groups about the epithelial cells, and sometimes free.

The writer has found them in 129 cases of acute blennorrhagia and 15 cases of chronic blennorrhagia in the male, and in 79 cases of purulent urethral secretion in the female, but has not found them in other secretions. In 25 cases of blennorrhagia (with gonococci) he was able to discover the persons who communicated the contagion and to find in them also the presence of the gonococci.

The attempts at inoculation with the secretions not containing the gonococci gave negative results. In 5 cases the secretion from fetid balanitis was introduced into the urethra, this secretion, which contained minute bacilliform microbiæ, did not have the slightest effect. The vaginal secretion charged with microbiæ of numerous different forms was similarly inoculated without effect.

In the urethræ of three men the vaginal secretion from a virgin 14 years of age was introduced. The secretion contained epithelial cells, spherical and bacilliform microbiæ—no result. A fetid and purulent secretion from the vagina, which contained a large quantity of bacilliform microbiæ with very active movement was introduced into the urethræ of 3 men without. In 3 women where the urethral secretion contained the gonococci, but the vaginal secretion was free from it, a considerable quantity of the vaginal secretion was introduced into the urethræ of 3 men without effect. One of these women was menstruating. At the same time there was taken from this woman a very small quantity of the urethral secretion containing the gonococci and introduced into the urethra of a man, with the result that at the end of 2 days there was a urethral discharge from the urethra containing the gonococci with epithelial cells, and on the 3rd day he had blennorrhagia with great masses of the gonococci. An identical result was produced by the inoculation of the urethral secretion of the two other women. A small quantity of the urethral secretion containing the gonococci produced a blennorrhagia in the same subjects in whom it had been possible to introduce a large quantity of the vaginal secretion, free from gonococci, of these same women without results.

While these results are strongly in favor of the pathogenetic nature of the gonococci, they do not furnish the scientific proof of their nature. To establish that it will be necessary to cultivate and inoculate these microbiæ, which cultivation is very difficult, and they cannot be inoculated upon the lower animals.

Welander found the gonococcus in men not only in the urethral secretion, but also, in 4 cases, in periurethral abscess, once in a lymphangitis which had been converted into an abscess, and where the purulent secretion, of several months' duration, from the extremity of the lymphatic cord contained the gonococci.

The presence of the gonococcus in the vagina was only determined 10 times; in 4 cases the vaginitis was acute, in all the others, subacute with purulent secretion. The cervical secretion, which was more or less purulent, was frequently examined in prostitutes, without showing the gonococci. But of 163 women—not selected, in 79 gonococci were found in the urethral secretion.

The clear secretion from the glands of Bartholin was examined in twelve cases. No gonococci were found, but other microbiæ were present. In 5 cases of acute bartholinitis no gonococci were found, although 3 of the women had them in their urethræ. In two women suffering from fistula the result of bartholinitis, gonococci were found in the secretion coming from the fistulæ, they also had gonococci in the urethræ. In 21 women who suffered from a purulent discharge from the excretory canal of the gland of Bartholin, the gonococci were found in each case. All these women except one had these microbiæ in their urethræ. The fact that the gonococci are frequently found in the gland of Bartholin and in its excretory duct, is of great practical importance. This makes the possibility a very strong one that a woman suffering from this affection would communicate blennorrhagia in coitus—while a woman who has the gonococci in small quantity in the urethral secretion is much less dangerous.

Cancer of the Pancreas.—M. Babbillon reports (*Le Progrès Médical*) a case of cancer of the pancreas in a man who was in a state of extreme emaciation and suffered from cough for two years, but for three months before death he had a gradually increasing difficulty in retaining food in the stomach; there was no vomiting, but an almost immediate regurgitation of the food taken. Habitual constipation, retracted abdomen, epigastric region painful to the touch, with a doughy feel. Other symptoms negative.

The autopsy showed tuberculous deposits at the summit of both lungs. There was a vast aneurismal dilatation at the arch of the aorta, which was dilated throughout its thoracic portion and full of stratified clots. At the epigastrium was a carcinomatous mass as large as the fist and developed at the expense of and about the stomach. It was immediately to the left of the cardiac orifice, and had invaded the lymphatic ganglia. The pancreas was stuffed with carcinomatous deposits, of which one, that was quite voluminous, when cut into gave out a puriform fluid. There was also a lobulated cyst at the inferior border of the pancreas.

This case is of interest in several respects: In the first place, the aortic aneurism remained entirely unrecognized during the lifetime of the patient; probably the dilatation of the thoracic aorta, which ceased suddenly at the diaphragm, was in part due to the compression exercised on it by the carcinomatous abdominal mass. Secondly, by the absence of all vomiting and the existence of alimentary regurgitation, which allowed of a diagnosis locating the cancer at or near the cardiac orifice of the stomach; and thirdly, the presence of cystic and carcinomatous degeneration of the stomach without any glycosuria during life.

THE

Journal of American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR of this JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information, should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE..... $5,00.
SINGLE COPIES..... 10 CENTS.

Subscriptions may begin at any date. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS

SATURDAY, AUGUST 30, 1884.

GASTRIC DILATATION.—At a recent meeting of the Société Medicale des Hopitaux, M. Bouchard gave some interesting conclusions based on an analysis of 220 cases of dilatation of the stomach. As he found that it is associated with chronic disorders in sixty per cent. of the cases, it is but natural that it should often be masked by a variety of symptoms pertaining to the concomitant disease. It is the more apt to be overlooked, since it is not always manifested by dyspeptic disturbances. M. Bouchard divides ectasis of the stomach into "enteric, dyspeptic, hepatic, renal, cardiac, cutaneous, rheumatic, consumptive," according to the prominence of the phenomena. Furthermore, he regards the disorders, which are expressed by these diverse groups of symptoms and which complicate the malady in question, as its result, though the connecting link is not always easy of discovery. That dilatation of the stomach may lead to many of these conditions, particularly dyspeptic, enteric, cutaneous, etc., is not unreasonable; but it seems to us somewhat injudicious to attribute "cardiac lesions," unless indeed they be functional, to gastric distention. In the abstract of his paper, which alone we have seen, the nature of the lesions which he designates "cardiac," whether organic or inorganic, is not stated, but, if he means the latter, we have no desire to dispute him. On the other hand, if he refer to organic heart disease, may he not have committed the fatal error of confounding it with an accidental concomitant or of mistaking cause for effect. A recognized result of heart disease, in particular of mitral lesion, is congestion of the abdominal viscera; and in the case of the stomach, this is sooner or later manifested by impaired digestion. The food undergoes fermentation, fatty acids are evolved, and the patient suffers from distressing flatulence and eructations. If this evolution of flatus continues in this distensible organ day after day, as it must inevitably do, gastric dilatation would be a natural consequence. Hence, contrary to Bouchard's statement, a dyspepsia, itself the effect of a cardiac lesion, would cause the dilatation, and not the latter cause the indigestion. However this may be, we fail to appreciate how distention of the stomach can do more than functionally derange the heart.

The diagnosis of this stomachic disorder is determined, according to Bouchard, by the detection of a "*bruit de clapotement*," a succussion sound upon percussing the organ below an imaginary line connecting the last rib of the left side with the umbilicus.

Dujardin-Beaumetz criticised this justly as being scarcely reliable, even if practiced after a state of fasting or the ingestion of liquids. Ziemssen, who enjoys a great opportunity for the study of this condition among the inordinate beer-drinkers of Munich, where it is of frequent occurrence (though we do not mean to trace a connection between it and the habitual consumption of a large quantity of beer) says the only absolute method of determining ectasis of the stomach is to distend the organ by means of carbonic acid and then outline it before the gas escapes. This is easily accomplished by administering separately bicarbonate of soda and tartaric acid in solution. Thus distended the stomach emits a highly sonorous percussion note and can be easily outlined. Indeed, in marked cases the organ can often be seen as a huge tumor which then does not even need to be percussed. This procedure occasions the patient some temporary discomfort, and after a few minutes, the ejection of the contents of the stomach, but is entirely harmless.

IRRIGATION AND EPURATION OF SEWERAGE.—We make no apology for having occupied a part of the space allotted to proceedings of medical societies in several preceding numbers of the JOURNAL, with the very interesting and important paper of Dr. Barnes and the discussion thereon in the Section on Practice of Medicine and Hygiene of the Suffolk District Medical Society, Mass. The subject there discussed, namely, how best to dispose of the excretions and refuse necessarily accompanying the aggregation of human beings into families and communities of fixed location, is perhaps the most important of all the sanitary problems that are now demanding the atten-

tion of the profession. The progress of civilization has demonstrated no one thing more clearly, than that soil and water contaminated by the presence in them of such excretory and refuse matter, are capable of engendering several of the most distressing and fatal diseases we have to encounter. And yet such contamination has commenced, and is progressively increasing wherever the excretions and refuse are either deposited in cesspools, sunk in the soil, or turned through sewers into the neighboring waters, whether of brook, river, lake, or sea. The evil has chiefly attracted attention in connection with the sewerage of cities and manufacturing towns, but it exists to a greater or less degree wherever human beings become permanent residents.

It would be easy to find thousands of isolated farm houses resting upon soil impregnated with the drippings of the kitchen, the cesspools, and the barnyard, and in which typhoid fever, diphtheria, scarlatina, etc., are almost annual visitors! [See the examples given by Dr. Bardwell in his paper in another part of this JOURNAL.] If it is true, as claimed by Dr. Barnes, that the only effectual mode of rendering sewerage material innocuous and preserving the purity of water and soil, is to use it for the irrigation of either forests or cultivated lands, where it is effectually epurated in nature's laboratory, and its materials appropriated for vegetable growth, the sooner the work is begun in that direction, both in cities and rural districts, the better it will be for human health, prosperity and life. It would be a comparatively easy task for a large proportion of our farmers and inhabitants of villages, to turn all the contents or drippings of the cesspools and barnyards, through drainage pipes to neighboring cultivated fields where it would increase the harvest in the very act of undergoing effectual epuration.

The subject is worthy of a large share of the attention of the American Public Health Association at its meeting in St. Louis the approaching autumn. For, say what we please about the seeds or germs of disease and the laws of their diffusion, it is certain that none of them thrive well in pure air accompanied by pure water and a clean soil.

INTERNATIONAL MEDICAL CONGRESS.—The meeting of this organization at Copenhagen, having closed its sessions, is described by correspondents as having been highly satisfactory in all respects. The number in attendance was not so great as in London, three years previously; but the papers read and questions discussed were of general scientific interest and practical value. The invitation given by the American Medical Association, through its delegates, to hold the next meeting of the Congress in Washington, in 1887, was accepted. And it will be both the duty and the pleasure of the profession in this country, to make such preparations as will render that meeting equal in all respects, if not superior, to the one held in London in 1881.

PROGRESS OF CHOLERA.—We have nothing new to record in regard to the progress of cholera in Europe. At latest dates no new cases had occurred in Geneva, and the advancement of the season renders it probable that the scourge will this year be limited mostly to its present boundaries. The early refugees from Toulon and Marseilles are returning in great destitution; and as the disease still exists in both cities, many of them will be likely to become its victims.

In a previous number it was noticed that the cholera had appeared on a vessel bound for St. Lucia and New York. The vessel was cleared of its sick and disinfected at its first stopping place, and has since arrived off the harbor of New York, and is reported to be without sickness, and in a good sanitary condition.

DR. JOSEPH JANVIER WOODWARD, Surgeon U. S. A., and one of the ex-Presidents of the American Medical Association, died on the 17th inst., of disease of the brain, from which he had been suffering during the last two years. His connection with the Army Medical Museum and the Medical History of the Rebellion, together with his high scientific attainments, had caused him to be widely known and highly esteemed by the profession, both at home and abroad.

For a more full and interesting biographical sketch of the deceased, we refer to the Necrological department of this number of the JOURNAL.

TRANSFUSION OF BLOOD.—Under the head of Medical Progress, on page 188 of No. 7, Vol. three, of the JOURNAL, in stating the quantity of blood transfused in the case under consideration, the writer gives the expression "215 grammes (37 fl. oz.)." Of course, 7 fl. oz. are meant, instead of 37.

PRESIDENT OF THE BRITISH MEDICAL ASSOCIATION.—At the recent meeting of the Association in Belfast, Dr. W. T. Edwards, of Cardiff, was elected President for the ensuing year, and that city selected as the place for holding the next annual meeting.

THE American Association for the Advancement of Science is to hold its next meeting in Philadelphia, commencing Sept. 4, 1884. A large number of the members of the British Association are expected to be present.

RESIGNATION.—Dr. John C. Fisher, one of the most prominent members of the Marine Hospital Service, has tendered his resignation to take effect Sept. 30, 1884.

SOCIETY PROCEEDINGS.

CHICAGO SOCIETY OF OPHTHALMOLOGY AND OTOLOGY.

APRIL 8, 1884.

Dr. Boyer was unanimously elected a member of the Society.

Dr. Holmes then referred to a case, in which he had recently removed a splinter of steel from the vitreous humor by means of a Gruening's magnet. The incision in the sclerotic, through which the magnet was introduced, was made behind the ciliary region, in the temporal portion of the globe, although the foreign body could be seen lying in the vitreous, near the equatorial region of the opposite hemisphere.

The lens was so far cataractous that the metal could not be precisely located, either by oblique illumination or by the ophthalmoscope. Dr. Holmes believed the end of the magnetized probe could in this way be brought near the steel with less violence to the edges of the wound of the sclerotic, choroid and retina, than if the wound had been made in the nasal portion of the globe. In a case in which the lens being intact, the metal could be exactly located, it would be desirable to introduce the magnet as near the foreign body as possible, although the reporter thought there is liable to be more hæmorrhage from the conjunctiva at the inner than at the external angle.

The doctor thought that a crucial incision through the sclerotic, although advised, is objectionable, and called for the opinion of the Society as to the relative advantage of the various kinds of incision.

Dr. E. Z. Gardiner thought a crucial incision would expose the eye to greater danger than a long linear incision, in the latter case there being but two instead of four flaps.

Dr. Montgomery expressed a similar opinion.

Dr. F. C. Hotz also advocated the linear incision where the other was not an absolute necessity, and in this connection reported the following case:

Piece of Steel in Vitreous. August 29, 1882, I removed a piece of steel from the vitreous chamber with Gruening's magnet, under conditions which proved a very good result as to the preservation of the sight. The steel entered through the sclerotic on the previous evening. Except the minute cut on the sclerotic six millimetres from the nasal border of the cornea, there was nothing abnormal with the eye. With the ophthalmoscope a lanceolated body was discovered suspended in the vitreous, just above and behind the centre, it presented a bright, shining, silvery surface, and looked very much in shape as a diminutive silver fish turned downwards. A few dark streaks extended from the body to the sclerotic wound; otherwise the vitreous was clear. The fundus showed no lesion. The sight, I am sorry to say, was not tested. Under chloroform the scleral wound was enlarged horizontally to 2½ millimetres. The edges were held apart with fine hooks. Gruening's magnet introduced, on the first attempt the steel was brought out. It was 6 millimetres long, 1½ millimetres broad, tapering off to sharp points, and weighed 20 milligrammes. The wound was closed up by a conjunctival suture, and the patient put to bed with both eyes bandaged. He was kept in bed in a dark room a whole week. No unfavorable reaction followed, but he could only count fingers at six feet. With the ophthalmoscope I discovered no disturbance in the vitreous, except two dark streaks from the wound to the centre, and an opaque transverse streak in the fundus, above the papilla. During the second week the lower portion of the vitreous became very cloudy, and the opaque stripe in the fundus developed into a distinct retinal detached fold.

Later the obscuration of the vitreous consolidated into several separate clouds, between which portions of the fundus could be seen. Some parts of it appeared normal; in some the retina was distinctly detached, and in some it seemed that the retina was separated from the choroid by a thin layer of serum.

The patient was under observation three months. No material changes took place, and the sight did not improve.

Dr. E. Z. Gardiner then read a paper entitled Detachment of the Retina.

After reporting a case of extensive detachment of the retina, in which total re-application of the detached membrane took place, remaining *in situ* for two weeks, and then, without any perceptible cause, becoming detached again, the lecturer said:

The literature on the etiology of detachment of the retina is so extensive that the scope of this paper will not permit me to mention all that has been written on the subject, but I will endeavor to record with the extension that they deserve the theories which now seem to be most in favor.

For the sake of clearness, these theories may be divided into three groups:

The authors whose theories are comprised in the first group, claim that it is a fluid secreted by the choroid which, accumulating under the retina, produces the detachment.

Those comprised in the second, that a lack of elasticity in the retina as compared with the choroid and sclerotic, is the immediate cause.

In the third group are those who look on a shrinkage of the vitreous as the direct cause of detachment.

Among the latest articles on this subject I will mention that of Prof. Kara, who thinks that in a partial elongation of the choroid a distention of its elastic layer, and also of its hexagonal epithelium, takes

place. The sclerotic also becomes thinned, at this portion of the globe. This thinning of the membranes favors, according to him, the filtration of the lymph contained in Schwalbe's spaces, and facilitates its accumulation between the choroid and the retina.

Boucheron, in a recent communication to the Congress of Rouen, introduces in the pathogenesis of the retina, the latest theories advanced by the physiologists about the secretion of the intraocular liquids. He claims that the choroidal epithelium is the secreting element. When this secretion is excessive, it accumulates behind the retina and detachment is produced. As causes of this hypersecretion he mentions affections of the kidneys, rheumatism, etc.

Dr. Galezowski, in an exhaustive article published in the *Recueil D' Ophthalmologie*, claims that a circumscribed choroido-cyclitis is the cause of detachment, but that a previous liquefaction of the vitreous must necessarily exist, before a detachment takes place. To prove his theory (advanced first in 1873), he reports several interesting cases, and then appends a very instructive table of 649 cases—of these, 598 happened in myopic eyes; 51 in cases of hypermetropia and emmetropia. In 131 cases only could a rent be detected in the retina. In 120 he observed floating opacities in the vitreous. This author thinks that the presence of floating opacities in the vitreous is a sign of perforation and tearing of the retina.

Of those who look on the pathological changes of the vitreous humor as the direct cause of detachment of the retina, Henri Muller should be first mentioned. In 1866 he made the assertion that in certain cases detachment of the retina was caused by shrinkage of the vitreous. Previous to this date, however, he had called attention to the fact of the vitreous possessing the property of diminishing in volume, through a process of shrinkage which could end in a detachment of this humor from the retina. The first histological investigations in this interesting phenomenon were made by Ivanhoff. Prof. Leber read before the Ophthalmological Congress at Heidelberg (1882) a very instructive paper, in which he explains the detachment of the retina by the so-called perforation theory. By this theory, the frequent phenomenon of sudden detachment of the retina without a perceptible change in the tension of the ball, is explained. The primary cause of the detachment is a localized alteration of the vitreous in contact with the retina, consisting in hypertrophy of the radial fibres, formation of fine bundles of connective tissue, which in the process of contraction exert a traction upon the retina, which produces a solution of continuity in the membrane, thus allowing the degenerated and liquefied vitreous to pass between it and the choroid. In this process there is simply a change of locality of the fluid from the inner side to its outer—consequently there is no cause for an increase of tension.

Leber bases his theory upon the evidence brought to light by the examination of 27 cases of detachment, seen by him during the last two years, of these 15 were "fresh" cases, from a few days to two weeks duration. In 11 of these a perforation was demonstrated, in one it was suspected, while in the remaining three its existence could not be proven, neither excluded. In long-standing cases perforations were not seen as often. In 12 cases, lasting from ten months to ten years, a perforation was found only in 3 cases. In 4 its existence seemed very probable—not found in five cases. Summing up the 27 cases, a positive result was reached in 14—doubtful in 4—negative 8. We have now reviewed in a succinct manner the theories advanced to explain the causes of a disease with which we are unfortunately too familiar. But wherein lies the truth, is hard to tell. All the theories are made so plausible, by their propounders, that one is tempted to accept them as the truth and turn away from that uncomfortable state of mind which to uncertainty is inherent. But unexpectedly some clinical fact jumps into the field and overturns the whole theoretical structure, leaving us in the same perplexing situation from which we started. The truth is, although it may pain us to confess it, that the etiology of detachment of the retina in myopic eyes, still remains shrouded in mystery.

In the selection of a theory we should be guided entirely by clinical experience, for I believe that a clinical fact is worth more than a hundred theories. Experimentation is worth but little in this line of investigation, because the process to which an eye has to be submitted in order to bring about the condition which we find present in highly myopic eyes, is such that it renders the results untrustworthy. We know that foreign bodies thrust into the eye experimentally or accidentally will, through a process of inflammation and subsequent shrinkage of the vitreous, detach the retina, but this fact cannot explain the cause of detachment in myopic eyes where absolutely no traumatism has existed. I performed a number of experiments in pigs' eyes, but here also the results were unreliable, not only on account of the post-mortem changes which had taken place, but also because the condition of the vitreous is entirely different from that found in highly myopic eyes, and in attempting to render it liquid, or withdraw a portion of it, or inject, or rather attempt to inject, fluid under the retina so much traumatism is necessary that reliable results are nearly impossible. Experiments may and do cast a little light upon the matter, but it is not sufficient to enable us to draw any positive deduction therefrom. Relying entirely on the clinical test, let us by its light examine these theories.

The theory of subretinal effusion can explain certain varieties of detachments of the retina, if a preexistent diminution in the volume of the vitreous is admissible. In a gradual detachment this theory explains matters in a satisfactory manner. But in a sudden detachment, it does not. I can not conceive how a vitreous, partially liquefied or not, should, as if by magic, decrease sufficiently in volume, to allow another fluid to exude into a chamber limited by a resistant lining and to do this *without increasing at any time the tension.* This is contrary to all physical laws, and when we remember that the tension, far from being increased, is diminished, the conclusion forces itself upon our minds that we must look elsewhere for a more satisfactory explanation. We do not find it I think in Von Graefe's theory, in which

the trouble is ascribed to a lack of elasticity of the retina as compared to that of the choroid and of the sclerotic. This theory does not stand the clinical test, for how can we admit this lack of elasticity in a membrane which gives such strong evidences of the contrary in its inflammatory conditions. Let us now turn to the theory based upon the shrinkage of the vitreous as a cause of detachment of the retina. Before entering fully into the matter I will endeavor to explain the reason why the posterior portion of the vitreous in highly myopic eyes where sclerectasia posterior exists, is found to be in a fluid degenerated condition, and also why in such eyes there is a tendency to shrinkage of the vitreous.

The experiments performed by Max Kneis, show that the vitreous receives its nutrition from the choroid; the liquid lymph passing through the retina, the external layers of which it also nourishes. At the posterior pole, according to this author, the nutrition is very slight, owing to the greater thickness of the retina at this place. As the retina becomes thinner, the amount of fluid which passes into the vitreous is larger, and it reaches its maximum, at the most anterior portion of the choroid. Now if in the physiological condition the nutrition of the posterior pole is very meagre, it is but reasonable to deduct that if the choroid at this point is degenerated the nutrition will decrease in proportion to such degeneration, reaching at last a point where the secretion of lymph is so poor that it lacks the power to constitute healthy vitreous humor. In this manner the liquefaction of the vitreous at the posterior pole of highly myopic eyes mentioned by Alt is easily explained. But even if the theory of Max Kneis is not accepted and we admit that the vitreous receives its nutrition only from the anterior portion of the choroid, the ciliary body, then too if there is a lack of nutrition, the first part to suffer will be that further removed from the source of nutrition, in other words, that portion of the vitreous nearest the posterior pole. It is a fact that highly myopic eyes in which degeneration of the choroid or sclerectasia posterior is present, are not healthy, and the liquefaction of the vitreous is a proof in itself of the poor nutrition it has received, be its source from the ciliary body or from the whole choroid. The natural consequence of poor nutrition is shrinkage, diminution in volume, atrophy, etc. These premises once accepted, we find that Leber's theory will explain in a satisfactory manner the phenomena which take place in detachment of the retina, a shrinking vitreous in the anterior portion of which a radial formation exists, (Leber). The adhesions formed by a diseased vitreous, at those points where it is still in contact with the retina, a liquefaction of the vitreous beginning at the posterior pole and gradually advancing toward the anterior portion of the eye, are the immediate cause of the catastrophy which only needs one step more to take place. The traction on the retina increases as the shrinkage progresses, thus giving rise to the metamorphopsia and other prodromic symptoms. The continued traction or a sudden jar overcomes the resistance of the already strained retina; it tears, the liquefied vitreous enters behind the membrane, and the detachment is effected. Dr. Galezowski, in his excellent article above referred to, states that he only found a rent in the retina in 131 cases, and that floating opacities were seen in but 120. He, therefore, claims that the presence of floating opacities in a case of detachment of the retina points to the existence of a rent in this membrane, and *vice versa*, that the absence of these opacities is a sign that no tearing has taken place. This statement does not bear the clinical test, however, for we all have seen cases where floating opacities in the vitreous long precede detachment of the retina. The simple fact that the rent could not be seen does not, in my opinion, prove that it did not exist, for it might well happen that it was so situated that it could not be seen—indeed, I believe that in many cases they escape notice because they are so located that the folds of the detached retina entirely hide it from view; and furthermore, it is not at all necessary for the solution of continuity to be large. The retina tears in a manner very similar to thoroughly soaked blotting-paper, as I have been able to convince myself by tearing the fresh retina under the microscope. There is a moment before the regular separation of parts takes place when a liquid can easily penetrate through it, and as the moment that the retina becomes detached the traction from the vitreous ceases, the rent may remain stationary and not acquire such proportions as to render it visible with the ophthalmoscope. I do not consider the case which the same author reports, in which a small opacity was seen engaged in a perforated retina, working its way into the vitreous, as a proof that the opacities are formed only in the subretinal fluid. There is another form of detachment of the retina, the etiology of which is made by the theory of shrinkage of the vitreous, viz.: detachment in folds. In this form the subretinal effusion theory utterly fails, for a liquid secreted under a membrane which is equally throughout would naturally expand in a circular form. The detachment would, therefore, commence at the centre of the figure and gradually creep on to the periphery. On the other hand, nothing is easier to account for than a fold being raised by a traction exerted from within. The process can be easily demonstrated, even in eyes where the vitrous is not degenerated, by introducing a very fine pair of forceps into the vitreous chamber, firmly closing them and gently withdrawing them. In this manner I have been able to produce beautiful specimens of detachment in folds. I am perfectly aware that this theory does not answer in every case, and the clinical history of certain cases will militate against it; but I firmly believe that in those cases of detachment of the retina happening in highly myopic eyes, the immediate cause is the traction exerted by a degenerated and shrinking vitreous, and no other theory that I know of can explain in a rational manner one of its most constant phenomena, viz., the suddenness of the detachment. Neither can any of the other theories explain in a rational manner how there can exist a fluid behind and another in front of the retina, without a perceptible increase of tension.

This paper called forth a long discussion on the merits of pilocarpine treatment. Almost every mem-

ber had given this remedy a trial, and all were unanimous as to its inefficacy in producing a permanent cure.

Dr. Montgomery exhibited a new self-registering perimeter, by M. Blitz (Upsala). It is fixed to the back of the chair in which the patient sits. The test object is carried by a bent arm coming from behind, and is suspended before the patient's eye.[1]

BOERNE BETTMAN, *Sec'y.*

CHICAGO MEDICAL SOCIETY.

A THEORY OF THE CHOLERA.

A paper read before the Chicago Medical Society, August 18, 1884. By John Bartlett, M.D., Chicago, Ill.[2]

MR. PRESIDENT:

At the last meeting of this Society, in referring to the cause of cholera, its methods of advance, mode of spread, etc., it was manifest that a radical difference of opinion prevailed as to these features of the disease. While it must be admitted that the knowledge of the cholera is very imperfect, it may yet be of interest and profit to frame some theory of the disease which shall conform to every known fact regarding it, and which may offer explanations of the phenomena of the disorder as satisfactory as the limited knowledge of such subjects will in the present state of science admit of. Such a theory is of value, if simply as a framework which may hold together in an apparently perfect order and relation, a large number of fragmentary facts which might be lost to the mind if allowed to lie detached and disconnected.

I have accordingly presumed to set before you tonight what I conceive to be, such a theory of the disease, taking occasion to follow the method of induction so far as to erect the theory upon a trestle work of facts, assumed to be analogous, drawn from other departments of observation.

Events are occurring about us similar in many particulars to the rise and spread of epidemic diseases. One of the most striking of these, perhaps, is the prevalence of that plague to vegetation, the army worm. The laws of this pest have something in common with those of cholera. Thus the cause of the army worm is always present in, and indigenous to, certain localities favorable to its development, life and methods of propagation. Appearing yearly in these habitats it spreads occasionally, and with some show of periodicity over extents of territory far beyond its normal limits; and these periodic eruptions frequently cover vast areas of territory, carrying devastation over continents. In this march outward from the nidus of development, pushing onward, and further onward, by somewhat regular, yet occasionally interrupted stages, the army worm resembles an epidemic of disease in its mode of approach to a place, its gradual attainment of an acme of destructiveness, and final abatement. Thus the army worm millers indigenous to certain marshy lands of the South, in the year 1861, sallied from their haunts in illimitable swarms and deposited their eggs in suitable places and at a suitable period of the growth of early vegetation in every county from the Gulf to the Lakes. These eggs lay dormant until stimulated by the warm weather. Then, apparently, starting from its habitat at the southward, began the northward march of the army worm which overran the country. It was because of the fact of the apparent onward march of the countless hosts of these invaders that they received the suggestive name of the "Army Worm." And yet their march was only apparent. They moved only from field to field, as other insects for the purpose of forage. They advanced northward only as the peach blossom advances northward, their march kept pace with the increment of heat of the advancing season necessary for the development of the long-deposited egg. The line of their advance was an isothermal one.

Thus the worms keeping pace with vegetation, appearing when the winter wheat was "in the milk," advanced toward the north slowly, so that they appeared in Maine two months after they were first seen in Missouri. After several weeks the destroying agents disappeared. They had not moved on to other conquests, as people supposed, but the worm, disappearing under the sod, had become a chrysalis, which in a few weeks emitted the miller, which deposited its eggs, and thus completed the cycle of the insect's life. In the above reference to the army worm invasion it was assumed by some that the whole field devastated had been sown with the germ of the plague the previous season. Observation of the insect indicated, however, that it passed through its phases within a few weeks; and it is probable that the visitation was not thus sown broad-cast and at one time; but that the invasion was by the gradual encroachments of successive "crops" of the worm; so that the insects marching northward into Michigan were not "cotemporaries," but the descendants by several removes of those which weeks before invaded Southern Illinois. Thus a brood of worms, disappearing in the northern counties of Mississippi as chrysalites, were represented in a few weeks in Middle Tennessee by millers attracted northward in search of early vegetation suitable as nidi for their eggs. The crop of moths from these eggs would in turn desposit their ova in Kentucky, and so the advance northward would be effected not by the worms, but by that element of the insect floating in the air and endowed with power of swift flight, and with selective instinct. In regard to the continuance of the recurrence of these insects it is essential that the several elements find suitable resting surfaces and conditions (of temperature, moisture, etc.), and in the lack of these the element may perish, or may remain inactive for an indefinite period, till conditions occur requisite to arouse it to development. Thus in the latitude of St. Louis, with favorable conditions two

[1] For a more detailed description, we refer the reader to the *Centralblatt für prakt. Augenheilk.*, August, 1882, p. 251.

[2] The interesting paper of Dr. Bartlett herewith presented, will be read with more satisfaction and interest, if it be known that the illustrations made use of, "Army Worm" and the "Marsh Fungus," have been carefully studied in the field by him. As long ago as 1861 he wrote a paper on the "Army Worm," the first paper ever written and published. See Dr. Smith's (State Entomologist of New York) report 1861. The author's experience with the cholera has also been ample. And with this annotation, the paper is submitted to the editor of the JOURNAL for publication.

L. H. MONTGOMERY, M.D., Sec.

or three broods of the worm were hatched in one season, while in Maine a second brood did not appear. Injury to crops wrought by secondary broods in one locality was comparatively limited. The new worms were preyed upon largely by enemies now come into the field, and material suitable for their sustenance was scarce, in good measure exhausted by the depredations of their predecessors. Finally, the miller of the army worm, "winters over," and deposits its egg at the appearance of vegetation in the spring.

By accident or design the insect in any of its phases could be transported to any distance; and as a miller it might be readily carried by the wind.

Dr. Koch, the noted microscopical investigator of the causes of disease, believes that he has discovered the actual entity producing the cholera in a fungoid cell, the "comma bacillus." As yet no more is known of this bacillus than its bare existence. It has a natural history, but the laws of its development and changing growth are yet to be learned. In the absence of such knowledge we may assume that it has certain phases of development as the army worm has, and that in each one of these it presents different potentialities. In relation to certain fungoid cells, the fact of such phases of existence are ascertained, and from analogy it may be inferred that the comma bacillus, after a period of active growth, develops into an apparently lifeless formed material, a crystalline substance, bearing, for illustration we may say, the same relation to the cell as coral does to the insect which forms it. This crystalline substance is not dead but living matter, and after a period of passivity, under favoring circumstances it puts forth buds, which presently burst and emit into surrounding media a protoplasmic fluid in which in time are developed the cells, thus completing the cycle of changes in the life of the plant. The peculiarities of the several elements may be thus stated; the crystalline substance we may suppose, is in the form of dust, granules or threads, not an impalpable something, but a material which may be seen by the naked eye and handled by the fingers. Under the microscope it may be seen to form from an aggregation and concretion of the cells. From it buds sprouting emit what may be compared to the contents of an egg—a protoplasm—an apparently homogeneous aqueous fluid in which presently begin to appear dim outlines of cells that gradually grow in size and increase indefinitely, not from cell division, but from the development of a cell from every atom of the protoplasm. The power of this fluid is only exhausted when its ultimate atom has become a cell. The characters of the protoplasm prior to the development of cells would probably elude all efforts at recognition so that fluids and tissues of a body containing it might be examined with the highest powers of the microscope without the detection of any organic particles.

All parts of the cholera fungus then are portable, all are tangible, visible entities, except the infinitely minute atoms of cells in the protoplasm.

The entrance of this fluid into the economy impregnates the system with the ultimate germ of the cells which under favoring circumstances develops at the expense of the blood, and produces the symptoms known as cholera.

The seeds of the disease are brought in the course of travel to a locality as crystalline substance—cholera dust—or as protoplasm diffused in the moisture of the air or water, or in the fluids of the human body, in the form of cells. Under favoring conditions these elements proceed to perform each its part in nature, so that sooner or later, after finding a resting-place in a community, they develop protoplasmic fluid which, disseminated by the law of diffusion of fluids in the air and water, or resting as the dew upon articles of food, finds its way into the body. The atoms of this poison, infinite in number and pervading large areas of space, are received into the system of all as is the pernicious miasm of the marshes. The blood, acting as other fluids have been observed to conduct when impregnated with fungi, resists the changes which it is the destiny of the foreign agents to effect until the number of the invaders, or some changes in the vitality or chemistry of the impregnated fluid makes longer resistance impossible, and an explosion of the disease like a paroxysm of pernicious fever results. The ejecta from the first cases, filled as they are with cholera cells, find their way generally to a favoring soil, and develop within a few hours succeeding phases of the fungus. Thus crop after crop of cholera atoms are begotten in a prodigiously increasing progression to extend the area of infection and increase the malignancy of the disease. It may happen that the germs of cholera introduced in a locality find circumstances unfavorable for their development at the time; and although the seeds of the disease may be pretty generally sown, they lie dormant for a season.

There are certain known facts regarding the cholera which at least lend plausibility to the theory that the germ may be implanted in a district long in advance of the actual appearance of the disease. Such, certainly, is the case when the cholera "winters over," as it is said, lies inactive, it may be, through the fall, winter and spring to arise into activity the following summer.

It has long been noticed that an epidemic of cholera is often preceded for weeks by the influenza, and a marked and general tendency to diarrhœa. The reasonable assumption that both the fore-running ailments and the succeeding disease were the effects of a common cause would imply the presence of the germ of cholera in a locality long before the actual outbreak of the epidemic.

The march of the pestilence, though generally in the track of travel, is sometimes singularly abnormal as to this law. The cholera sometimes springs up in places far out of the line of apparent exposure. These variations and exceptions to the general law of portability of the disease suggest a possibility of the truth of the theory that it may be primarily sown as a temporarily inactive dust, as well as implanted as a speedily developing protoplasm. It may be, that in attempting to trace the origin of the disease by noting in any locality the first case, we err in this, that we compare the course of the epidemic with the line of travel in the presence of the attack, when possibly

it is the course of the traveler from the infected district of last year to which attention should be given. The irregularity as to the time and place of appearance may be further referred to the varying soil and temperature of the respective localities considered as developing agents of the deposited germ.

It will be noted that there have been here set forth two theories as to the mode of advance of cholera. The one, that it advances in successive crops from a first or isolated case; the other, that the seeds are sown broadcast over the countries elected for visitation, and that these are developed when and as favorable conditions arise. The number of cycles which the cholera germ may undergo in a season may vary with the locality, temperature, etc., conditions which determine the severity of the epidemic and the length of its stay in a place. Thus, at St. Louis the number of its cycles might be three-fold greater than at Bangor. And a variation in the time of the cycle, also, might influence the rate of advance of the disease.

Changes in the blood effected by the protoplasmic atoms in their act of development into cells alone produce the cholera; the presence of cells which have already completed their growth, or the material formed from them, cholera dust, does not directly induce disease. Thus, rice-water discharges abounding with comma bacillus may be drunk without injury. The subsequent deposit of these cells in the ejecta of the experimenter may, however, lead to an outbreak of the disease, of which he may prove the first victim.

One of the most singular laws of the cholera is this, that with rare exceptions it marches *onward*. It remains active in a place a number of weeks and subsides, and the places next attacked are *beyond*, relatively to the starting point, the district last devastated. In reference to the army worm this also is a fact; and in regard to the march of the insect we can plainly discern the laws, and that, whether it be held that the eggs have been all deposited by the same army of moths, or by successive broods of them. In the one case we may suppose the millers, finding the fields of favorable deposit preëmpted, pass onward to unoccupied territory. In the other, because of the devastation made by the preceding generation, the millers of the present must instinctively move onward in search of proper resting places for their eggs.

Now, as the army worm moves onward by instinctive selection, may it be possible that the cholera fungus advances by a *vis a fronte*—a species of chemico-vital affinity—a diffusion in the direction of affinities not yet exhausted. Just as the small-pox virus dwells in a community till its affinities for all are expended, and then moves onward—in the direction of the unprotected.

To the student of cholera, the parallel furnished by the army worm as to the convection of its elements, and the possibilities and proper times and methods of quarantining against them are suggestive.

Means by which man might stamp out, or keep out the myriads of army worms which sometimes in a few hours filled to the brim the cordon of ditches plowed about the grain fields, and changed in an equally short time flourishing acres of wheat into a "marble ground," can hardly be devised. Plans by which he might unearth and devitalize chrysalides planted under every sod from Georgia to Maine are difficult to imagine. Methods by which he might successfully contend against the innumerable moths filling the air, might discover and destroy the numberless eggs deposited in every meadow on the continent are inconceivable.

How infinitely more difficult to avoid or to antagonize are the minute cells, the every way and everywhere portable dust, and the invisible, intangible, miasmatic atoms of the cholera.

And yet the farmers actually did antagonize their protean plague in all of its phases, and with a fair measure of success. They quarantined against the ever coming and ever increasing countless millions of worms. They energetically and persistently worked to keep off from the yet uninvaded fields by means of a cordon, mechanical and chemical, all possible insects—they plowed under, and deeply buried, in order to destroy, the chrysalides known to have formed; they attempted to entrap and destroy the millers by cordons of lights, and they burned the grass where the eggs were deposited.

The principles of quarantine against the cholera suggested by the theory of the disease here presented may be summed up in the following propositions:

Elements of the disease known to exist may be isolated or destroyed.

Places suitable for the development of the elements may be rendered unsuitable.

Ingesta possibly contaminated by the cholera poison may be avoided.

Badly infected districts may be evacuated.

According to this theory, during an epidemic the poison lurks in every individual. In the blood of an exposed person are two contending forces; the one the resistance of the vital fluids to the changes attempted to be made by the invading atoms; the other, the efforts of the latter to appropriate from the blood materials for their own growth.

One of the first evidences of the yielding of the forces contending for integrity of the blood is loss of the serum. The one important event in the chemical change in the blood necessary to give the victory to the ferment (invading atoms) is loss of its serum. Speaking figuratively, serum is the essential ally of the blood in its resistance to the invaders. Ejection of ever so little of this, tends to render the ejection of other portions easier, and to give the final victory to the poison.

Now, while no prophylactic measures are known, it is most fortunate for mankind that remedies are at hand which, if applied in season, may, unless the assault of the ferment be overwhelming, arrest the flow of serum and reinforce the blood in its resistance to the infection.

Even when the cholera has held full sway, when it has run its course without interference, it is not necessarily fatal. Either because the dose of the poison has been insufficient to destroy, or because in some life may continue after the virus has done its worst.

The secondary, reactionary conditions, following the collapse known as the typhoid state, are compli-

cated phenomena. They are expressions of the efforts of the system in its struggles with the resultants of the cholera paroxysm rather than a proper stage of the disease. They bear a relation to cholera which may be compared to that which surgical fever bears to injuries which caused it.

This theory of the presence of the germ of disease in the system of all involves the recognition of the principal of acclimatization in this disorder. One may become by gradual inurement habituated to the presence of the virus, and, perhaps, the majority so inured are able completely to resist it. As in the yellow fever, however, the acclimation may be speedily lost. Persons whose systems have not thus become acclimated to the poison may be, upon sudden exposure, stricken down with violence.

FOREIGN CORRESPONDENCE.

BELFAST, IRELAND, Aug. 5, 1884.

MR. EDITOR:

The fifty-second meeting of the British Medical Association was held in Belfast, Tuesday, July 29, to Friday August 1. Will you grant a little space to a delegate from the American Medical Association, that he may give an account of the proceedings to the members who did not have the privilege of attending? The meeting was largely attended, not a little attraction being added by the fact that only two of the previous meetings had been held in Ireland. Of the members sixteen were present as delegates from the American Medical Association.

Everything was done to make the meeting a success from every standpoint, and it will go on record as one of the most successful and most interesting meetings of the Society. The meeting was held in the buildings of the Queen's College, than which there could have been no more desirable place, the accommodations being ample, sufficient, and compact. The general meetings were held in the spacious halls of the library, and the sectional meetings in the various lecture-rooms—the fact that all were near and convenient being a great advantage.

Each day there were one or more general meetings at which the business of the Society was transacted.

There were besides, eight Sections, viz.: a. Medicine, b. Surgery, c. Obstetric Medicine, d. Public Medicine, e. Ophthalmic Medicine, f. Physiology and Pathology, g. Pharmacology and Therapeutics, h. Psychology. Each of which held three meetings, in which valuable and interesting papers were read and discussed.

Most admirable addresses were given by the President of the Society, James Cuming, M.D., F.K.Q.C.P., Professor of Medicine in Queen's College, and Physician to the Royal Hospital, Belfast; and in Surgery by Sir William McCormac, F.R.C.S., London; in Medicine by William M. Ord, M.D., Physician and Lecturer on Medicine to St. Thomas Hospital, London; in Physiology by Peter Redfern, M.D., Professor of Anatomy and Physiology, Queen's College, Belfast; and in Obstetric Medicine by George H. Kidd, M.D., Consulting Obstetric Surgeon, Richmond and Hardwick Hospitals, Dublin. These were all admirably written and showed exhaustive research, all with the exception of Dr. Kidd, who wrote on puerperal fever, being of a general nature, and as they will appear at length in the *British Medical Journal*, I will not take up your space with an abstract. Each and all received the most cordial attention and the best thanks of the Society were given to the writers.

In addition to the business proper of the meeting, everything was done to make the visit of the members one long to be remembered, and for this many thanks are due to Dr. Robert Esler, of Belfast, who not only was Chairman of the Excursion Committee which arranged and conducted some excursion for each day, but he wrote a special guide to the city of Belfast and the North of Ireland of 123 pages, which he presented handsomely printed and bound to each member.

The annual dinner was a very pleasant occasion.

The ladies being invited to the conversazione given by the President and Executive Committee, and to the reception given by the Mayor of Belfast, helped to make these very brilliant affairs. On Saturday, Aug. 2, the business of the meeting having been concluded, four general excursions were arranged. Each by a different route, comprised a day's trip in the North of Ireland. Of these the one to the Giant's Causeway was the favorite, about 300 members taking advantage of the occasion to visit this wonderful formation.

There were in addition, several garden parties and dinners to limited numbers, and each one who attended the meeting will long remember the hospitality extended to them.

Will also try to send you some information about the meeting of the International Medical Congress at Copenhagen.

N.

DOMESTIC CORRESPONDENCE.

TREATMENT OF CHOLERA.

EDITOR OF THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:—

It has seemed proper to me to call the attention of the profession to the valuable article on the treatment of Asiatic cholera, by Dr. S. S. Todd, in the JOURNAL for Aug. 9, not only because the subject is peculiarly opportune at the present time and the method proposed seems exceedingly rational, but for the reason that, some time ago, a similar proposition was made by a German writer, and the statement that the plan has hitherto been untried needs modification.

Prof. Samuel, of Königsberg, in 1883, published a brochure on Subcutaneous Infusion as a Method of Treatment of Cholera, in which he proposed at some length a plan similar to that recommended by Dr. Todd; the same writer has recently reiterated his views,[1] a synopsis of which I believe will be of interest and value.

[1] Die subcutane Infusion als Behandlungsmethode der Cholera, von Prof. Dr. S. Samuel, in *Berliner Klinische Wochenschrift*, 1884, No. 28.

In his opinion the essential pathology of cholera consists of a process of transudation into the intestinal canal—the original cause being the presence of certain bacilli—that, by continually robbing the blood of its watery constituents, causes it to thicken, stagnate and finally stop circulating. If the disease passes beyond the stage of premonitory diarrhœa, and the patient is already in a collapsed state it is useless to attempt any direct treatment of the transudation, as all medicaments introduced by mouth or rectum are immediately carried off, either through vomiting or diarrhœa. Even if the intestinal muscles are incapable of any exertion, as in so-called cholera sicca, the situation is not much better, for here absorption fails, a fact proved by recorded experiences.

Experience has also demonstrated that, in a majority of cases, this great loss of serum is the cause of death.

The duty of the medical attendant is therefore, in some way, to make up for this loss; and in the performance of this duty he derives some comfort, though it be scanty, from the fact that the stage of collapse is always short, lasting in survivors but from 24 to 36 hours; to whatever fact the improvement may be due, it is certain that after the expiration of that time absorption begins again and the circulation improves.

From the above reason the chief end of treatment should be the maintenance of the fluidity of the blood during this critical period. To accomplish this aim the infusion of water directly into the blood has been employed, as offering the great advantages of a direct supply, and doing away with the question of absorption. It is fair to add that all who have attempted this operation once or twice have been strongly impressed with its favorable influence. But as not one nor several injections, but an almost continuous stream is needed, we are at once confronted by the difficulty of carrying out so delicate a surgical procedure on a restless patient and the great risk of diffuse phlebitis.

The method of subcutaneous infusion is, *per se*, an innocent one, the only question that arises being whether so large amounts of water as are needed can be absorbed by the surrounding tissues, a question that experience alone can fully answer.

It is a fact that all free œdema in cholera patients quickly disappears. Beigel (*Lancet* ii, No. 13, p. 352), has already in a case that was completely collapsed made hypodermic injections of warm water in the calves, thighs, and arms, so that at first he injected in all seven ounces. Since improvement followed this measure he made two further attempts, but the patient finally succumbed.

During the epidemic of 1866, Dr. Samuel repeatedly injected substances into the calves and epigastrium. Absorption, though often slow, invariably followed.

It is probable that absorption in the subcutaneous tissue is slowest when the circulation is reduced to a minimum. But even up to the last inspiration it would take place at the spot where the circulation is longest maintained, that is, in the neck. Therefore in bad cases the nearer to the neck the injections are made the better, and Dr. Samuel recommends that they be made in the upper part of the chest on both sides directly under the axillæ, and that they be thrown in at many different points in this region and that their absorption be aided by massage.

It is to be remembered that the lower half of the body does not absorb nearly as well as the upper half.

Trocars that are bound to irrigators and can be left *in situ* are to be preferred to needle apparatuses, in that the latter may pierce important vessels and nerves.

For injections salt solutions consisting of six grams table salt, and one gram carbonate of soda in one thousand parts distilled water heated to a blood heat are suitable.

It must always be borne in mind that in the nature of the case success can only be expected if the subcutaneous injections are followed up continuously to the termination of the stage of collapse.

The above has been written in no spirit of captious criticism, but with a full appreciation of the extreme difficulty that the busy practitioner labors under in the effort to keep *au courant* with the current literature, and is communicated with the belief that any contribution to the study of Asiatic cholera, in view of its expected visitation to our country, should be given all possible publicity.

GEO. A. STAPLES, M.D.

Dubuque, Iowa, Aug. 20, 1884.

NECROLOGY.

WOODWARD, JOSEPH JANVIER, M.D., Surgeon U. S. A., was born in Philadelphia in 1833; died of disease of the brain, near Philadelphia, 17th of August, 1884. He received his academical education at the Philadelphia Central High School, from which he received the degree of A.B. in 1850 and his A.M. in 1855, and was honored on the occasion with the position of valedictorian. After receiving his first academic degree he began the study of medicine in the office of Prof. George B. Wood, and attended lectures at the same time in the University of Pennsylvania, from which he received the degree of M.D. in 1853. His graduating thesis was on the antiseptic properties of chloride of zinc. He at once began the practice of his profession in his native city. Dr. Woodward formed a class for instruction in the use of the microscope and the study of pathological anatomy, and the examination of students preparatory to their final examination by the Faculty for their medical degree. His practice was growing, and he was becoming favorably known as a teacher and practitioner, when the war between the States broke out. He at once tendered his services to the government, and was commissioned Assistant Surgeon 5th August, 1861, and served for a time in the peninsula of Virginia. He was assigned to duty in the Surgeon-General's office 19th May, 1862, and continued in this position until his illness and death. He

was Curator of the Army Medical Museum, which grew up under his immediate supervision.

Dr. Woodward was advanced to the rank of Captain and Assistant Surgeon 28th July, 1866, and promoted to the rank of Major and Surgeon 26th June, 1876. He received commissions of brevet Captain and Lieutenant Colonel for "faithful and meritorious services during the war." To Dr. J. J. Woodward and the late Dr. Geo. A. Otis, U. S. A., was entrusted the editing of the Medical and Surgical History of the Rebellion. The medical profession of the country know and appreciate how ably this work was accomplished. His classification, naming and describing the many pathological specimens in the Army Medical Museum, was of itself a vast work, and one which will be an enduring monument to his genius, industry and accurate knowledge of the subject. It is true that in the surgical part of this he was ably seconded by his accomplished associate, Dr. Otis.

Dr. Woodward was a voluminous writer in various departments of medicine, and of the collateral sciences. A simple enumeration by title of his papers would fill several columns of this journal. His contributions were welcomed by every medical and scientific periodical, and they adorn the pages of many of them. His work was always well and conscientiously done. He had a true love for scientific investigation. His mind was analytical, and demanded evidence, which he weighed in a most searching and logical manner. He had great power of work, which he taxed severely, and to which may be ascribed as clearly as in any case I ever knew his failure of health and premature death. In 1875 his health underwent something of a strain, and for some six or eight months he suffered from a series of painful phlegmonous boils, but a little rest restored him to his usual good health.

In 1879 the doctor from overwork impaired his digestion, and for a time he suffered extremely from insomnia, but a trip to the mountains of Switzerland and rest for some six or eight months apparently restored him again to full health. The completion and character of the work done on his last volume shows no perceptible impairment of his vigor or powers. In the winter of 1880 his horse fell with him in Pennsylvania avenue and fractured his leg. This confined him to his room for some time, but he apparently fully recovered from this.

The range of studies in which Dr. Woodward was proficient and master were numerous. With the microscope he was an authority of wide and general recognition by those most competent to judge. His writings and opinions have a high value with the profession. In point of magnitude, the "Medical History of the Rebellion" is, perhaps, the most colossal professional work ever published in the United States. Upon this and his work upon Typho-Malarial Fever, and his photographic, microscopical work will probably rest his fame as a medical man and scientist. His literary work not only called for a familiarity with Latin and Greek, but with the French, German, Spanish and Italian languages, all of which he was able to read and translate with ease. His proficiency in languages he acquired while engaged on his other work, and his last volume of the medical history of the rebellion is particularly rich in classical allusion, comparison of texts, and quotations from original authors. Dr. Woodward early identified himself with medical organizations, and was an earnest supporter of a high standard of medical education, professional worth and medical ethics. He was a member of the Philadelphia County Medical Society, and of the College of Physicians and Surgeons of Philadelphia. He was a member of the Central International Medical Congress, which met in Philadelphia in 1876, and read an able paper opening the discussion in the Section of Practical Medicine on Fever. He became a member of the American Medical Association in 1865, attended its meetings in 1866-'67-'68-'69-'70-'72-'73-'74-'75 (when he was chosen one of the Vice-Presidents) 1876-'77-'78 and '79. In 1881, at the meeting in Richmond, Va., although not present, he was chosen President of the Association. Shortly after this his health broke down and he, with his devoted wife, started on a trip to Europe in hopes of benefiting him. On the 31st of January, just before leaving, Dr. Woodward wrote a touchingly kind letter to the Association informing them of his impaired health and his purpose to travel, and the regret he felt in not being able to be present at the meeting in St. Paul. This letter was read to the meeting, and may be seen in full on the third page of the volume of Transactions for 1882.

His trip abroad, although protracted, did not stay his disease, but, on the contrary, it progressed unfavorably, and he returned home in the spring of 1883 in a worse condition than when he left. After some months' treatment in his own house he was taken to an institution in Philadelphia, which was under the charge of a personal friend and an accomplished physician, where he received every attention which friendship and the best medical skill could command, but without improvement.

Dr. Woodward was elected an honorary member of the Medical Society of the District of Columbia in 1874, and occasionally read papers before it. He was a member of the Philosophical Society of Washington, and its President in 1881. He was one of the original members of the National Academy of Sciences, and an active and valuable worker in its ranks. It was characteristic of the doctor that he always engaged in his scientific studies with zeal and enthusiasm, never saving himself labor or taking facts at second hand which he could verify by experiment or examination. He thus by his temperament and his love of true science kept himself on a strain all the time. He was a fine conversationalist and popular in society, but of late years became so engrossed in his work as to give but little of his time to mere social intercourse. He was also a good debater, possessed a fine flow of language and presented his points in logical sequence and with convincing clearness and force. Although Dr. Woodward is chiefly known outside of his near acquaintances by his writings, still he was a skillful practitioner, and one of the most accurate diagnosticians

to have been met with anywhere. His abilities in this direction alone would have assured him a large and lucrative consulting practice in Washington or any other city. Even with all his engagements and duties, both in army circles and with the city practitioners, he was always ready to advise with medical men who called upon him with a history of an obscure or embarrassing case. Scarce a medical practitioner of any note in Washington but who has repeatedly profited by his suggestions and advice in this way. The writer takes pleasure in acknowledging his many obligations to him.

July 2, 1881, he was selected, or rather detailed by the Surgeon-General, by the request of the Secretary of War as one of the staff surgeons to attend President Garfield. The labors and anxiety incident to that long and confining duty seriously impaired his health, and from which he never recovered.

It was understood that he had kept accurate notes of this case with a view to publication, but never, we believe, took it up for study or arrangement. Dr. Woodward was frequently solicited by different medical colleges to accept chairs and devote himself to teaching, but he felt as though his life-work was to complete the medical history of the war. So he worked on, and we know the result. Dr. Woodward was twice married; by his first wife he had two children, a daughter and a son. His son, Janvier Woodward, graduated with high honors at Annapolis, and is now an officer in U. S. navy. His second wife was Blanch, daughter of the late Cornelius Wendell, of this city, by whom he had three children, two sons and a daughter. The doctor's death, although expected, was sudden. His remains were brought to his late residence, 620 F street, Washington, where funeral services were held by the Rev. Alexander Kent. His body was laid to rest on the evening of the 20th, in the peaceful shades of Glenwood cemetery, in the presence of many friends.

J. M. T.

LOMAX, CONSTANTINE, M.D. Dr. Constantine Lomax was born in Guilford county, North Carolina, on the 31st day of December, 1814. On the side of his father he was of English-Irish, and of his mother, of English-Welsh descent. In both lines his ancestors were among the early colonists of this country, and both of his grandfathers were soldiers in the Revolutionary war. When about two years old, his father, Abel Lomax, and his mother, Elizabeth Lomax, with their family, emigrated to Indiana, and located in Wayne county. The state having just emerged from its territorial condition into the Union, afforded very poor facilities for education. Four short terms in a common country school were all he ever had the privilege of attending. In 1837, his father and family removed to La-Porte county, on the northern boundary of the state, and Constantine accompanied them, and continued to work upon the farm with his father until 1843, when he married Miss Rachel Van-De-Vanter, of Lagrangé county. After this, he devoted himself to farming for some two or three years, when, by the influence of his brother, Dr. Wm. Lomax, he abandoned the farm and entered the office of Dr. Daniel Meeker, of La Porte, as a student of medicine. He attended three full courses of lectures in the Indiana Medical College, and graduated on the 17th day of February, 1848. Immediately after this he located in Marion and entered upon the active duties of his chosen profession, in partnership with his brother William. In this year, with the other physicians of the county, six in all, he associated in the organization of a county medical society, of which he continued an active working member until his death. In 1850 and '51, he attended a course of lectures in the Ohio Medical College in Cincinnati, and received a diploma from this school on the 4th of March, 1851.

In 1863, Dr. Lomax was appointed by President Lincoln, Surgeon of the board of enrollment for the eleventh Congressional District of the State, a position he held until the close of the war. The partnership existing between him and his brother in the practice of medicine was, by mutual consent, dissolved in 1876. Dr. Lomax, at various times, filled all of the offices of his county society, was a member of the District and State Medical Societies, and had been a member of the American Medical Association. He was a man of marked acuteness of discernment and accuracy of opinion. While he was unassuming and diffident in discussions at the society meetings, his opinions commanded the highest respect of his fellow-members. When differing from others, which he often did, he would state the grounds of difference in such clear and accurate terms as rarely failed to convince the other members of the correctness of his views. If uncertain of diagnosis or other matters of consideration, it was his custom to so express himself without argument or other waste of words. His knowledge of anatomy was unusually thorough for a country practitioner. In canvassing the pathology of diseases brought before the society, he was noted for his aptitude for anatomical and physiological explanation of symptoms presenting themselves in the case, so that while he was the most unobtrusive of all the members of the society, there was no one whose opinions were more influential in the decisions of the meetings than his.

Dr. Lomax was naturally of a cheerful, urbane disposition. Kindness of heart, a scrupulous regard for the feelings of others, and the claims of all to respectful recognition, made him a very agreeable companion. Having an exquisite sense of professional honor, and an unmitigated contempt for the groveling charlatan, he would prefer to abandon entirely a case, rather than indulge a contest where the petty devices of a trained medical knave were to be met before the tribunal of popular ignorance and gullibility. On one occasion, he was called on to consult in the case of a lady near a neighboring country town. When he arrived, he found an Eclectic in charge of the case. He examined the lady, and was satisfied she might be benefited by a proper treatment. After going out with the Eclectic, Dr. Lomax informed him that he regarded a consultation between two antagonizing professions as being eminently improper, and very wisely forbidden by the Ethics which he was under plighted obligations to observe

and carry out, and that he could not consult with him.

They called the husband out and informed him of the fact. The husband requested the doctors to remain while he could go in and see the patient and learn her wishes in the matter. In a short time he returned and said his wife wished them both to come into the sick-room, which they did. She expressed great astonishment at learning of the prohibition of the consultation, which she could not understand, but said since it was the case, she wished both doctors to stand up before her so she could see them both at once. The doctors felt a little embarrassed and amused at the undignified requirement, but yielding to the whims of the sick woman, stood side by side before her. After a brief review, she inquired of Lomax if he understood her condition? He replied he thought he did. Then could he cure her? He thought she might be benefited by treatment. Would he give her the treatment needed should she prefer him? He said he would do the best he could. Turning to the Eclectic, she told him she felt thankful to him for his faithful attentions and efforts to relieve her, but he knew she had suffered long and was not relieved, but was steadily losing strength; that now, without any disrespect to him, she would be glad to have Dr. Lomax give her treatment. The Eclectic assured her it would be perfectly satisfactory to him. Thus, without any bad blood, the matter was amicably adjusted.

Dr. Lomax was a conscientious stickler to the Ethics, and rarely or never had any difficulty in observing them literally in the exercise of professional avocations. He was liberal and earnest in promoting all measures tending to advance the interests, honor and usefulness of the profession. In 1876, he was appointed examiner for pension applicants, and when a board was organized for the purpose, he was chosen to preside in its deliberations, a position he held until his death.

In politics, Dr. Lomax was a Republican. Some thirty years ago he united with the M. E. Church, since which he lived the life of a faithful and consistent member. His last illness was painful in the extreme. He was literally tortured to death by an incorrigible neuralgia. He died on the 6th of March, 1884, in full confidence of a blissful future.

His death made a sad and irreparable breach in a family circle of nine living children, the youngest member of which was fifty-five years of age lacking three months. L.

MISCELLANEOUS.

OFFICIAL NOTICE.

ANNUAL DUES from members of the Association—*Five Dollars* per annum—are payable directly to the Treasurer. Such payment entitles them to receive the JOURNAL of the Association for one year.

SUBSCRIPTIONS TO THE JOURNAL from those who are not members should be forwarded to the office of publication, Chicago.

BACK VOLUMES OF THE TRANSACTIONS may be procured, at reduced rates, by addressing the Treasurer.

THE INDEX to the 33 Volumes of Transactions will be forwarded, postpaid, on receipt of *One Dollar* by the Treasurer.

According to a resolution passed May 9, 1884, at the Washington meeting, continuous payment of Annual Dues is required, to retain permanent membership.

RICHARD J. DUNGLISON, M.D.,
Treasurer.

Lock Box 1274, Philadelphia, Pa.

THE WIDOW OF CLAUDE BERNARD, it would seem from an article in *Le Progrès Médical*, has come under the ban of the law through the complaints of her neighbors that she kept an infirmary for dogs and cats. The lawyer for the defense says of her that "Mme. Claude Bernard is the widow of the illustrious savant of that name, and I have heard it said that she did not make him very happy. An unique cause of dissension existed between them. Here example was not contagious. M. Claude Bernard was, as is known, the initiator, the apostle of vivisection. My client was an ardent member of the opposite party. She is persuaded—and it is she who has told me—she is persuaded that when she has saved as many dogs and as many cats as her husband has immolated, their souls will be joined in Paradise."

The establishment contained forty dogs and as many cats, it was managed by women, and extremely dirty and offensive, for which she was fined and ordered to close her infirmary.

OFFICIAL LIST OF CHANGES IN MEDICAL CORPS OF THE NAVY DURING THE WEEK ENDING AUGUST 23, 1884.

P. A. Surgeon P. M. Rixey, orders to U. S. S. "Lancaster" revoked, to continue on special duty.

Medical Director C. Martin, to be retired Aug. 21, 1884

Surgeon T. C. Heyl, detached from U S S. "Independence," ordered to U. S. S "Adams."

Surgeon J. G. Ayers, detached from U S S. "Adams," placed on waiting orders.

Assistant Surgeon L. W. Curtis, detached from U. S. S. "Adams," placed on waiting orders.

P. A Surgeon F. B. Stephenson. detached from Navy Yard, ordered to C. S. S. "Bache."

P. A. Surgeon E Z. Derr, detached from C. S. S "Bache," placed on waiting orders.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUG. 16, 1884, TO AUG. 22, 1884.

Woodward, J. J., Major and Surgeon, died August 17, 1884.

Birmingham, H. P, First Lieutenant and Assistant Surgeon, granted one month's leave of absence. S. O. 162, Dept. of the Missouri, Aug. 12, 1884.

Wilson, Geo. F., First Lieutenant and Assistant Surgeon, relieved from duty at Fort Walla Walla, W. T., and to take station at Vancouver B'ks, W. T. S. O. 120, Dept. of the Columbia, Aug. 13, 1884.